

FIG. 1a

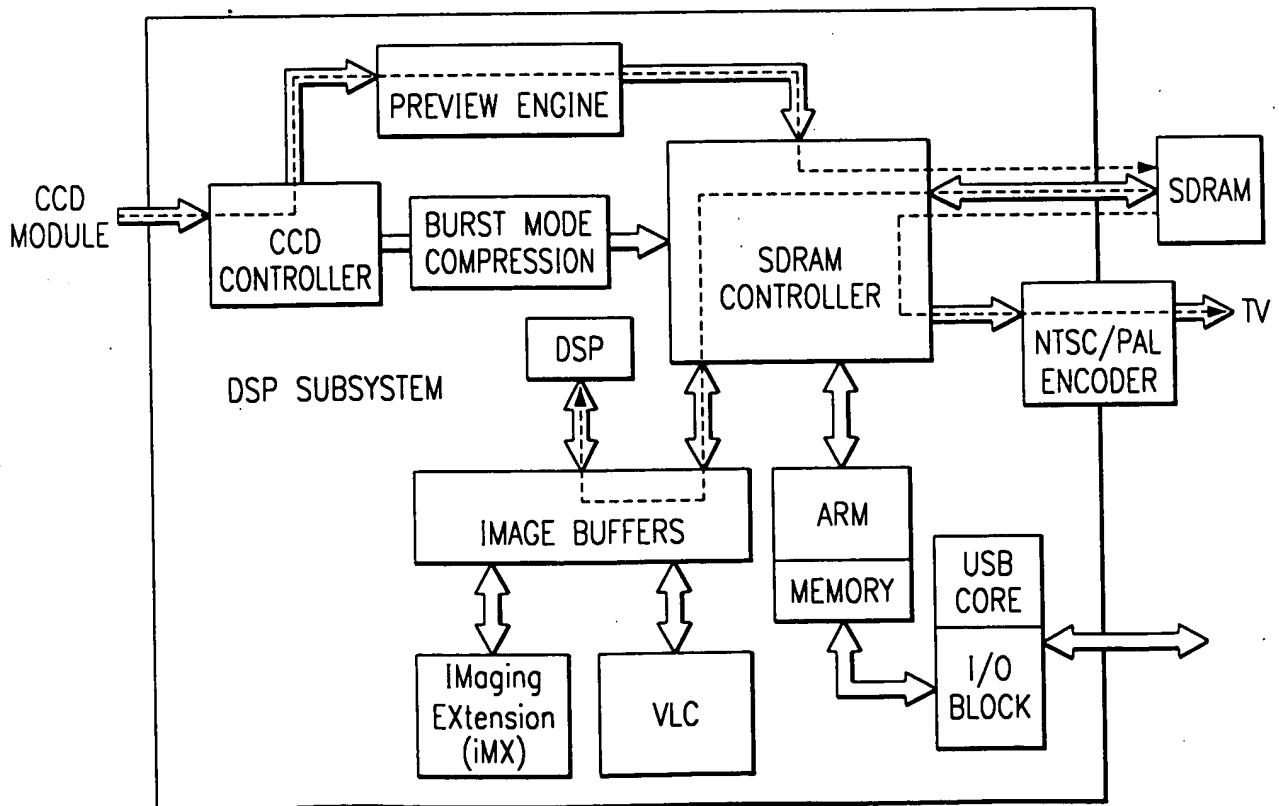
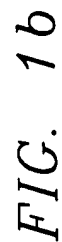


FIG. 2



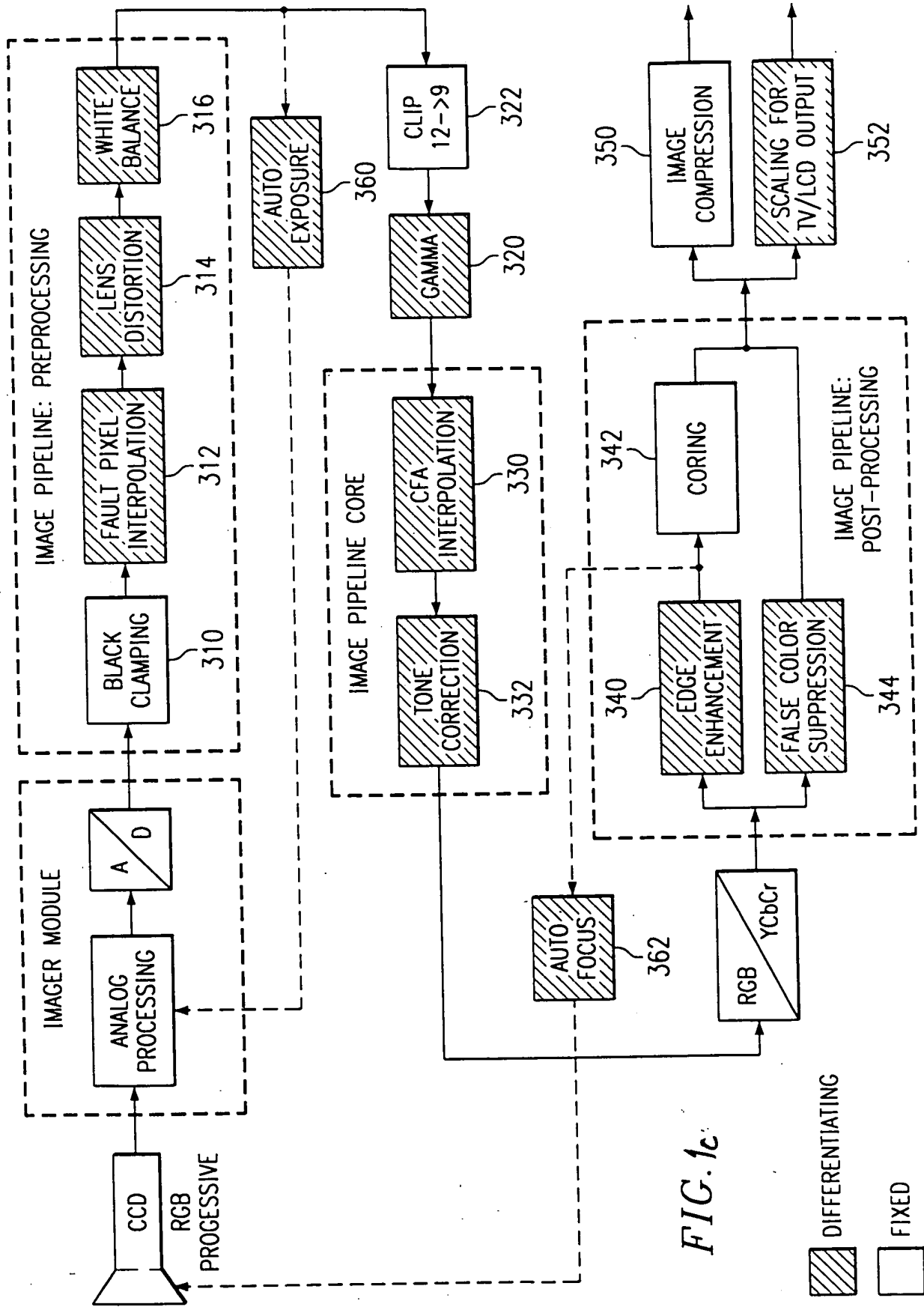


FIG. 1c

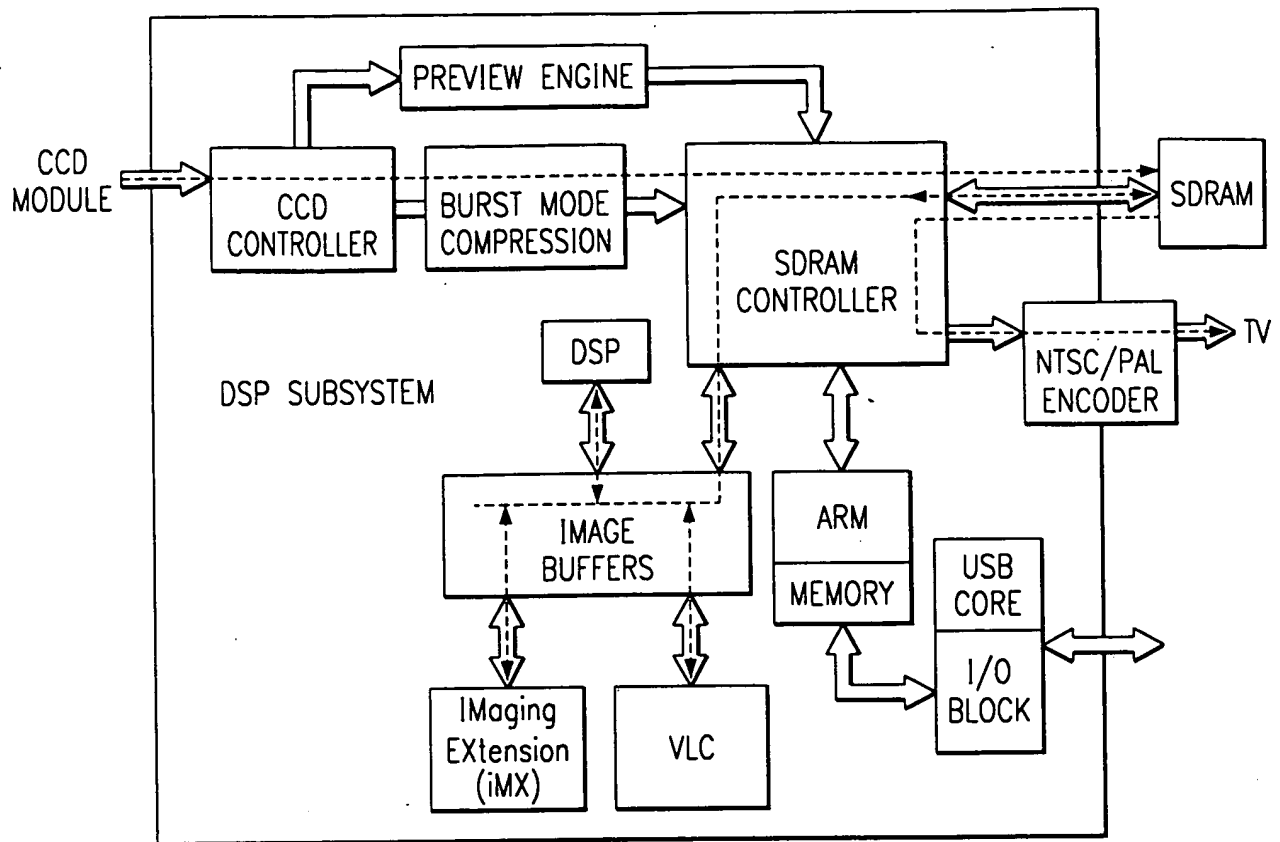


FIG. 3a

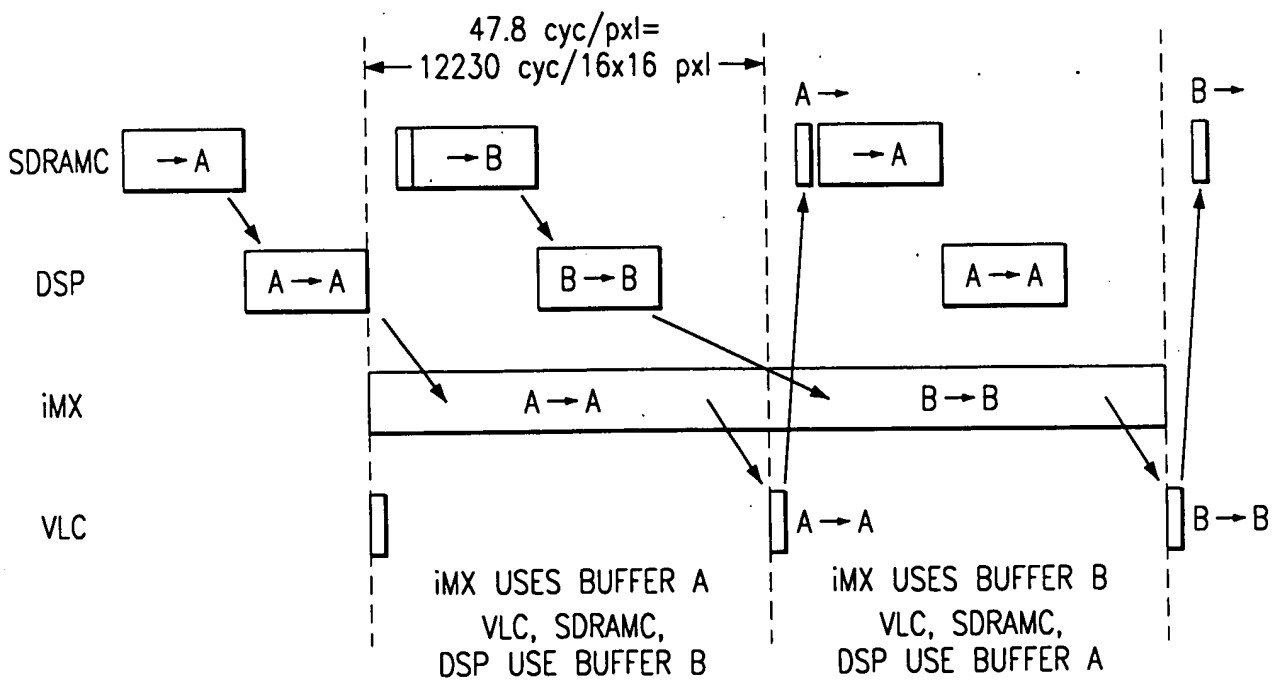


FIG. 3b

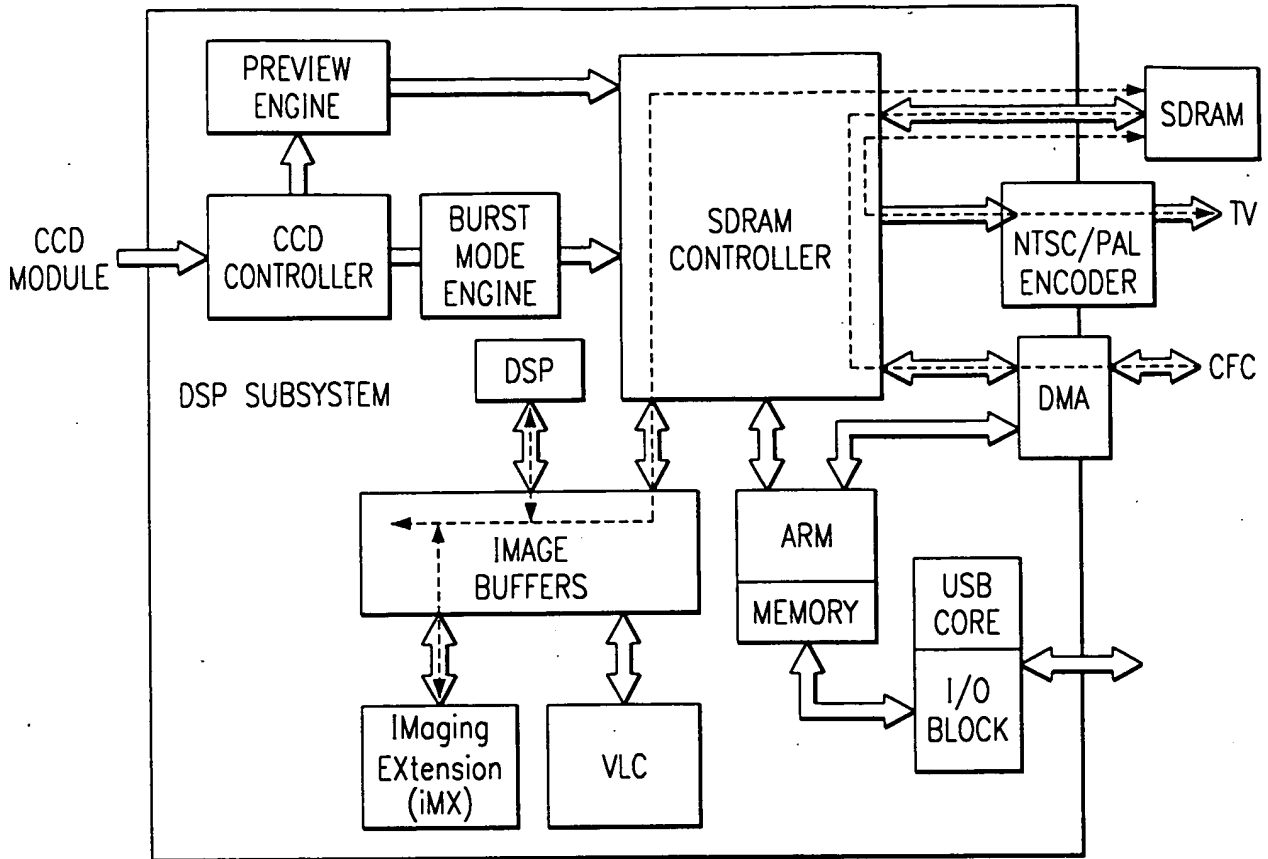


FIG. 4

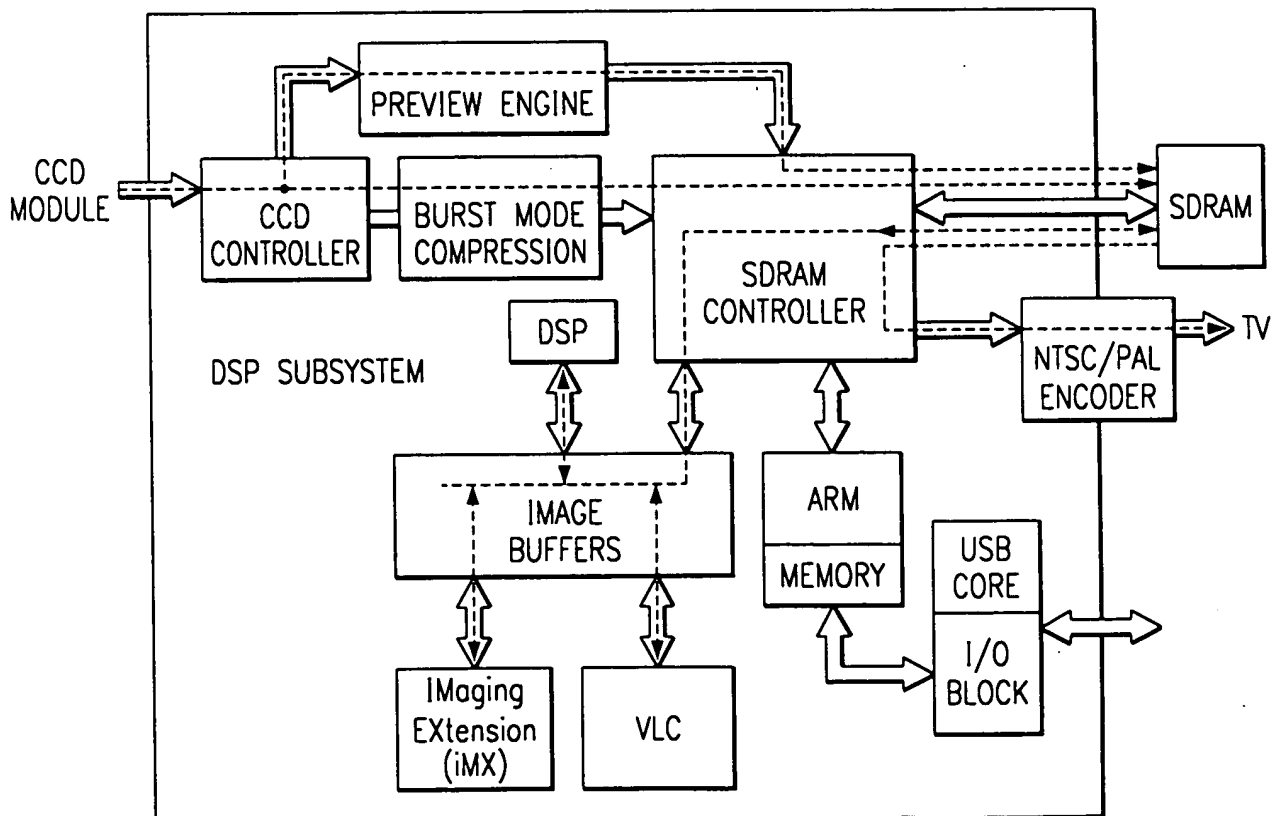


FIG. 5

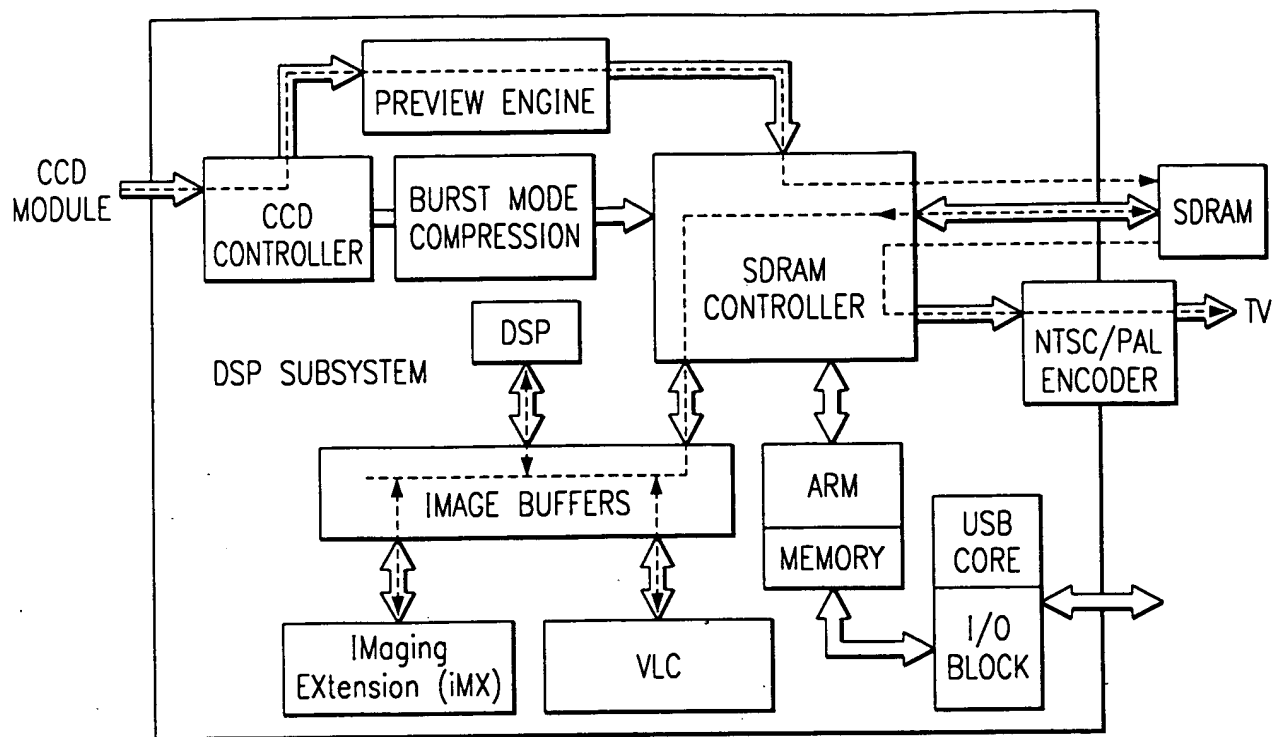


FIG. 6

R	G	R	G
G	B	G	B
R	G	R	G
G	B	G	B

FIG. 7a

Ye	Cy	Ye	Cy
G	Mg	G	Mg
Ye	Cy	Ye	Cy
G	Mg	G	Mg

FIG. 7b

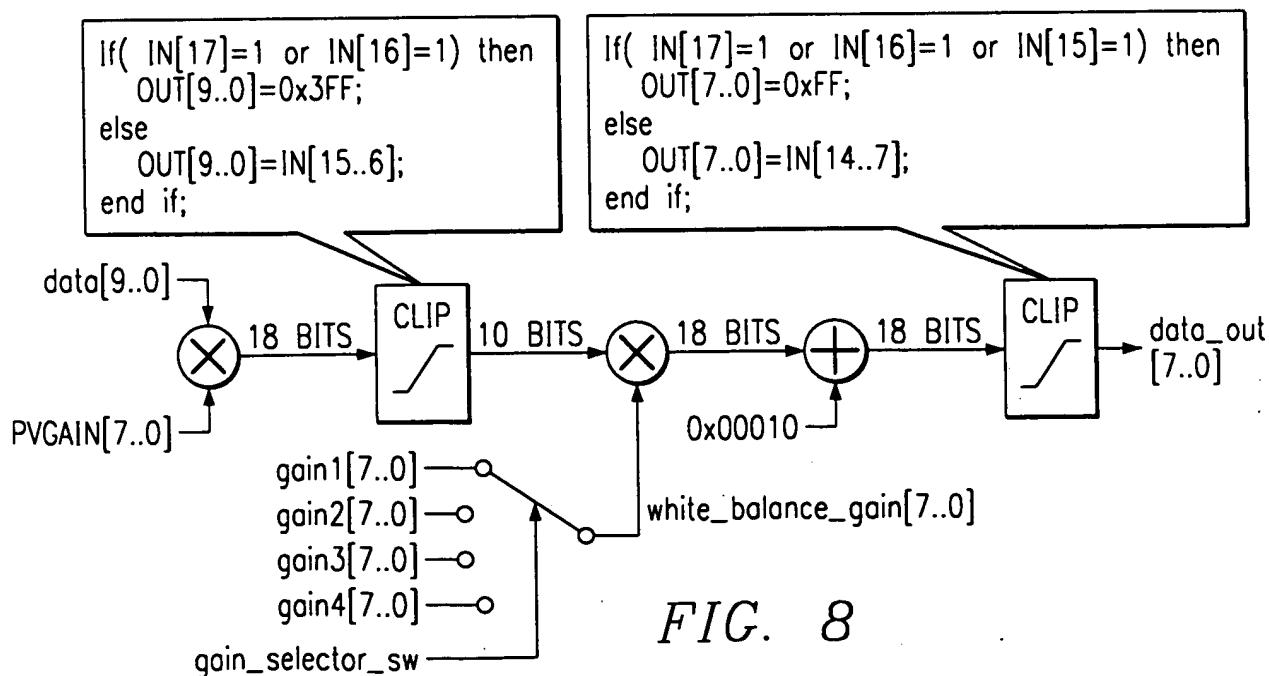


FIG. 8

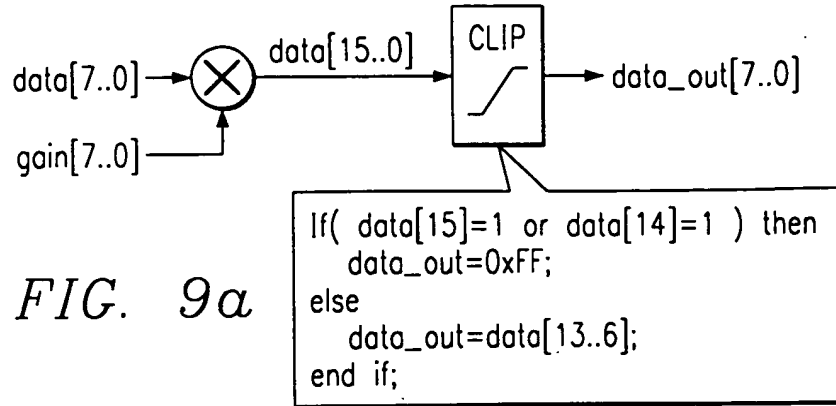


FIG. 9b

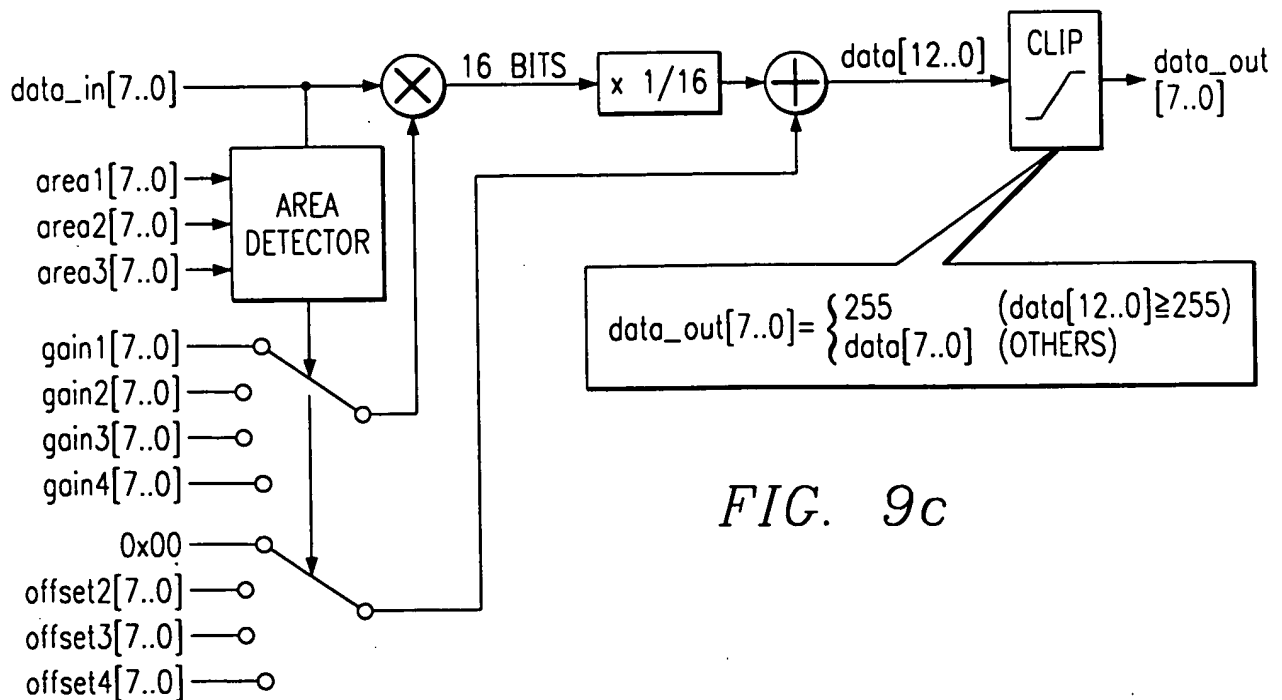
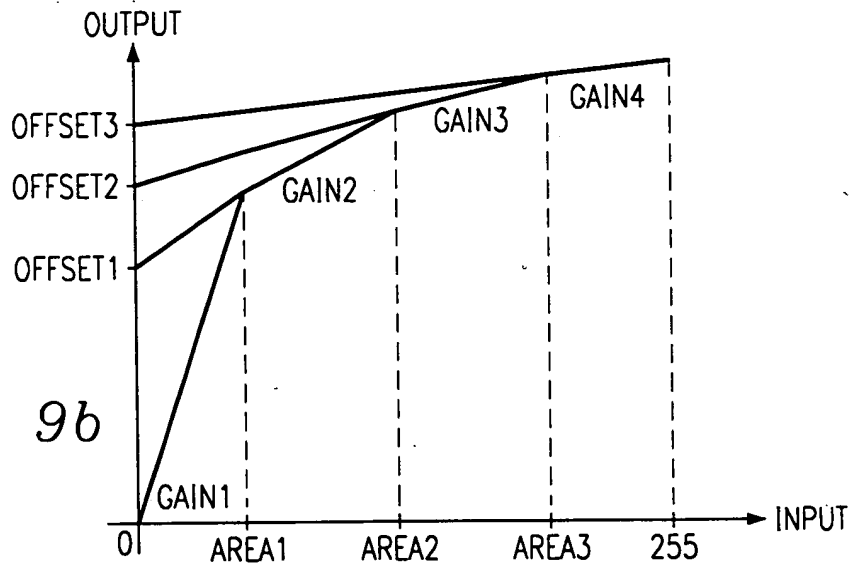
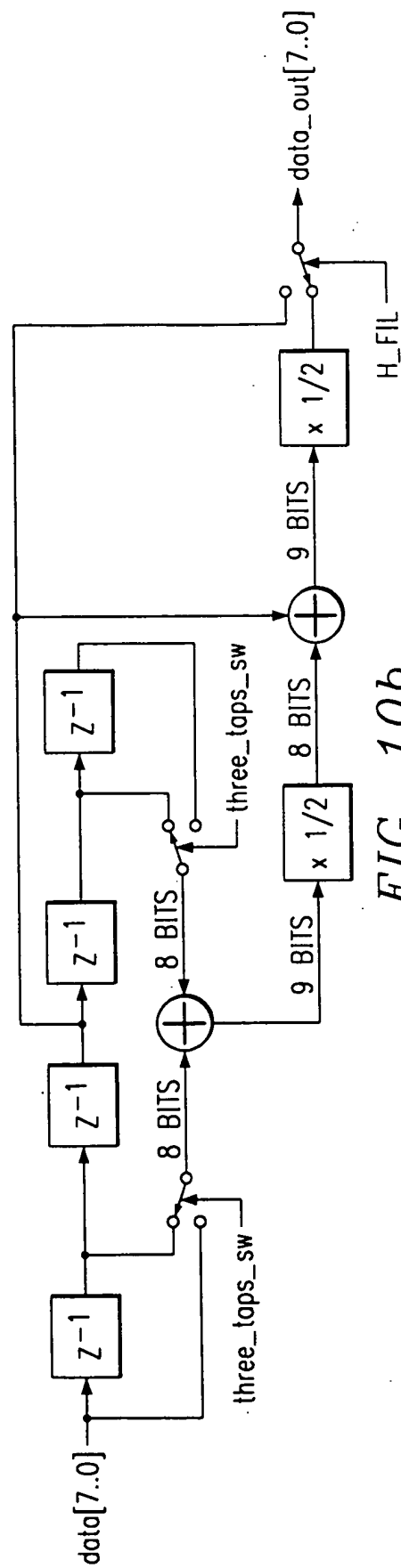
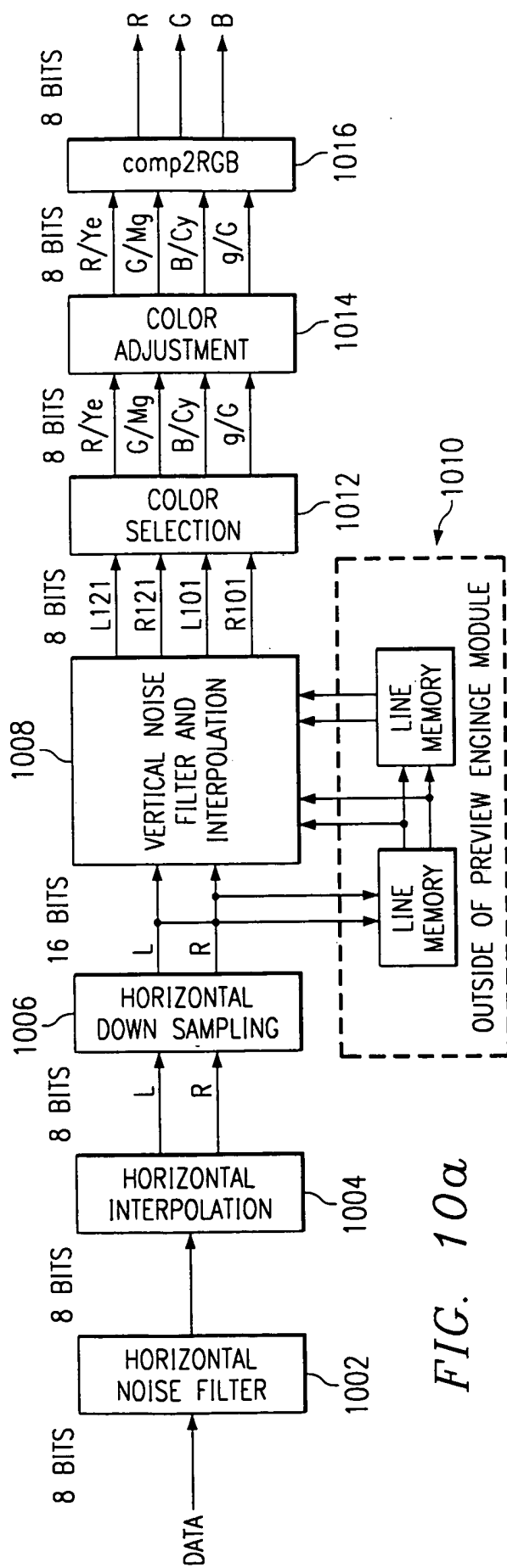
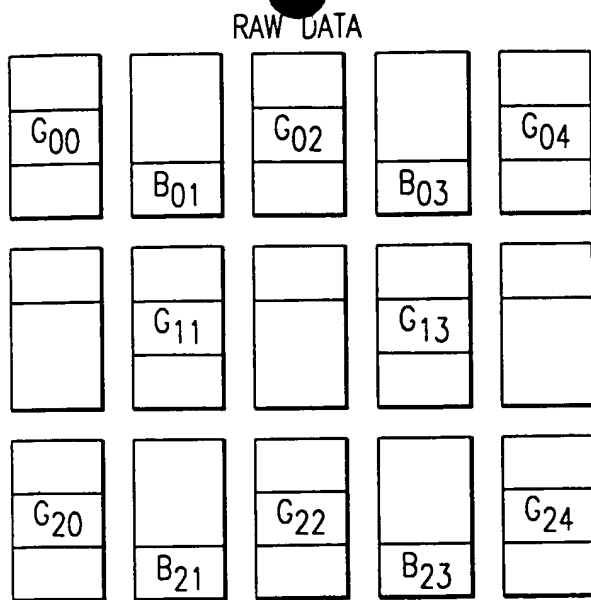


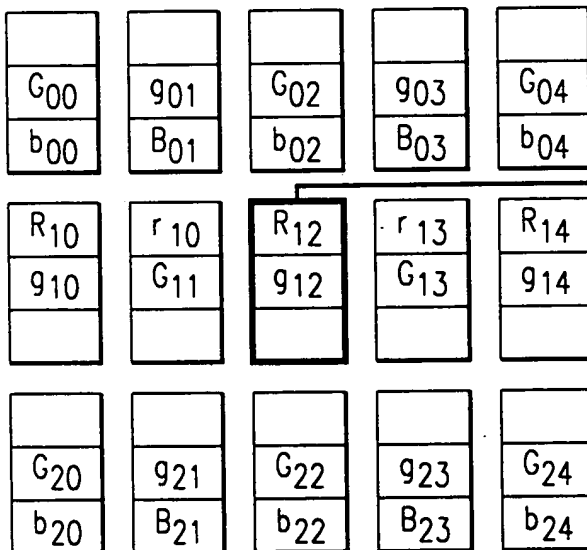
FIG. 9c







HORIZONTAL  
INTERPOLATION

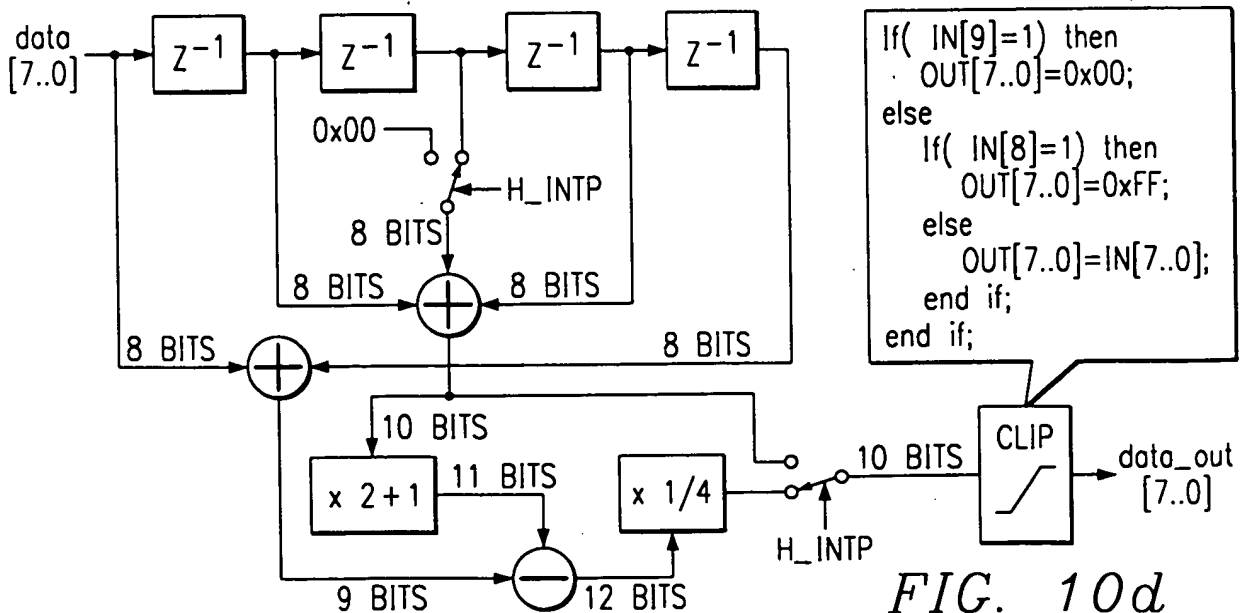


NORMAL MODE

$$g_{12} = \frac{-R_{10} + 2G_{11} + 2R_{12} + 2G_{13} - R_{14}}{4}$$

SIMPLE MODE

$$g_{12} = \frac{G_{11} + G_{13}}{2}$$



## OUTPUT OF HORIZONTAL INTERPOLATION

g <sub>01</sub>	G <sub>02</sub>	g <sub>03</sub>
B <sub>01</sub>	b <sub>02</sub>	B <sub>03</sub>

r <sub>11</sub>	R <sub>12</sub>	r <sub>13</sub>
G <sub>11</sub>	g <sub>12</sub>	G <sub>13</sub>

g <sub>21</sub>	g <sub>22</sub>	g <sub>23</sub>
B <sub>21</sub>	B <sub>22</sub>	B <sub>23</sub>

## VERTICAL INTERPOLATION ↓

r <sub>01</sub>	r <sub>02</sub>	r <sub>03</sub>
g <sub>01</sub>	G <sub>02</sub>	g <sub>03</sub>
B <sub>01</sub>	b <sub>02</sub>	B <sub>03</sub>

$$b_{12} = \frac{b_{02} + b_{22}}{2}$$

r <sub>11</sub>	R <sub>12</sub>	r <sub>13</sub>
G <sub>11</sub>	g <sub>12</sub>	G <sub>13</sub>
b <sub>11</sub>	b <sub>12</sub>	b <sub>13</sub>

SIMPLE MODE

r <sub>21</sub>	r <sub>22</sub>	r <sub>23</sub>
g <sub>21</sub>	g <sub>22</sub>	g <sub>23</sub>
B <sub>21</sub>	B <sub>22</sub>	B <sub>23</sub>

## COLOR ADJUSTMENT (NORMAL MODE) ↓

$\bar{r}_{01}$	$\bar{r}_{02}$	$\bar{r}_{03}$
g <sub>01</sub>	G <sub>02</sub>	g <sub>03</sub>
B <sub>01</sub>	b <sub>02</sub>	B <sub>03</sub>

$$\bar{b}_{12} = \frac{b_{02} - G_{02} + b_{22} - G_{22}}{2} - g_{12}$$

r <sub>11</sub>	R <sub>12</sub>	r <sub>13</sub>
G <sub>11</sub>	g <sub>12</sub>	G <sub>13</sub>
$\bar{b}_{11}$	$\bar{b}_{12}$	$\bar{b}_{13}$

r <sub>01</sub>	R <sub>02</sub>	r <sub>03</sub>
g <sub>01</sub>	G <sub>02</sub>	g <sub>03</sub>
B <sub>01</sub>	b <sub>02</sub>	B <sub>03</sub>

r <sub>11</sub>	R <sub>12</sub>	r <sub>13</sub>
G <sub>11</sub>	g <sub>12</sub>	G <sub>13</sub>
B <sub>11</sub>	b <sub>12</sub>	B <sub>13</sub>

$\bar{r}_{21}$	$\bar{r}_{22}$	$\bar{r}_{23}$
g <sub>21</sub>	g <sub>22</sub>	g <sub>23</sub>
B <sub>21</sub>	B <sub>22</sub>	B <sub>23</sub>

r <sub>21</sub>	R <sub>22</sub>	r <sub>23</sub>
g <sub>21</sub>	g <sub>22</sub>	g <sub>23</sub>
B <sub>21</sub>	B <sub>22</sub>	B <sub>23</sub>

FIG. 10e

# OUTPUT OF HORIZONTAL INTERPOLATION

Ye00	cy00	ye01	Cy01	Ye02	cy02
G10	mg00	g11	Mg11	G12	mg12
Ye20	cy20	ye21	Cy21	Ye22	cy22

VERTICAL  
INTERPOLATION ↓

Ye00	cy00	ye01	Cy01	Ye02	cy02
g00	mg00	g01	mg01	g02	mg02
ye10	cy10	ye11	cy11	ye12	cy12
G10	mg10	g11	Mg11	G12	mg12
Ye20	cy20	ye21	Cy21	Ye22	cy22
g20	mg20	g21	mg21	g22	mg22

$$ye_{11} = \frac{ye_{01} + ye_{21}}{2}$$

$$cy_{11} = \frac{Cy_{01} + Cy_{21}}{2}$$

SIMPLE MODE

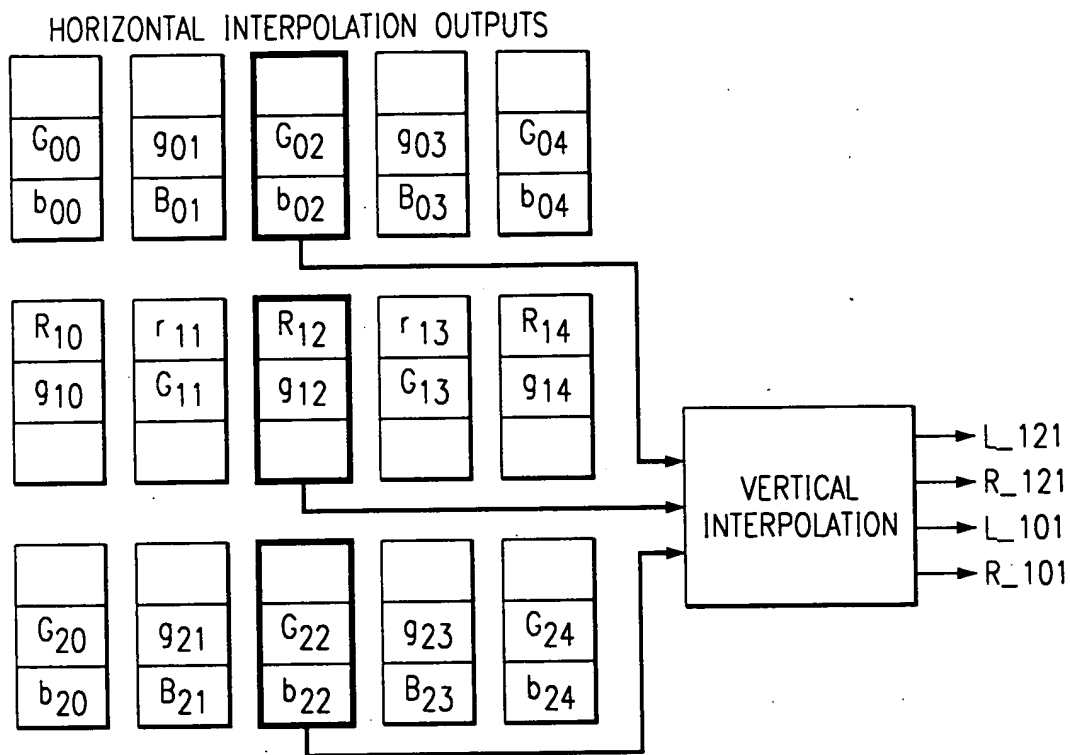
COLOR ADJUSTMENT  
(NORMAL MODE) ↓

ye00	cy00	ye01	cy01	ye02	cy02	ye00	cy00	ye01	Cy01	Ye02	cy02
g00	mg00	g01	mg01	g02	mg02	g00	mg00	g01	mg01	g02	mg02
ye10	cy10	ye11	cy11	ye12	cy12	ye10	cy10	ye11	cy11	ye12	cy12
g10	mg10	g11	mg11	g12	mg12	G10	mg10	g11	Mg11	G12	mg12
ye20	cy20	ye21	Cy21	Ye22	cy22	Ye20	cy20	ye21	Cy21	Ye22	cy22
g20	mg20	g21	mg21	g22	mg22	g20	mg20	g21	mg21	g22	mg22

$$a = g_{11} + Mg_{11} - ye_{11} - cy_{11}$$

$$\left\{ \begin{array}{l} \overline{ye_{11}} = ye_{11} + \frac{a}{4} \\ \overline{cy_{11}} = cy_{11} + \frac{a}{4} \\ \overline{g_{11}} = g_{11} - \frac{a}{4} \\ \overline{mg_{11}} = Mg_{11} - \frac{a}{4} \end{array} \right.$$

FIG. 10f



NOISE FILTER = OFF

$$\left\{ \begin{array}{l} L_{121} = R_{12} \\ R_{121} = g_{12} \\ L_{101} = \frac{G_{02} + G_{22}}{2} \\ R_{101} = \frac{b_{02} + b_{22}}{2} \end{array} \right.$$

NOISE FILTER = ON

$$\left\{ \begin{array}{l} L_{121} = R_{12} - g_{12} + \frac{G_{02} + 2g_{12} + G_{22}}{4} \\ R_{121} = \frac{G_{02} + 2g_{12} + G_{22}}{4} \\ L_{101} = \frac{G_{02} + G_{22}}{2} \\ R_{101} = \frac{b_{02} + b_{22}}{2} \end{array} \right.$$

FIG. 10g

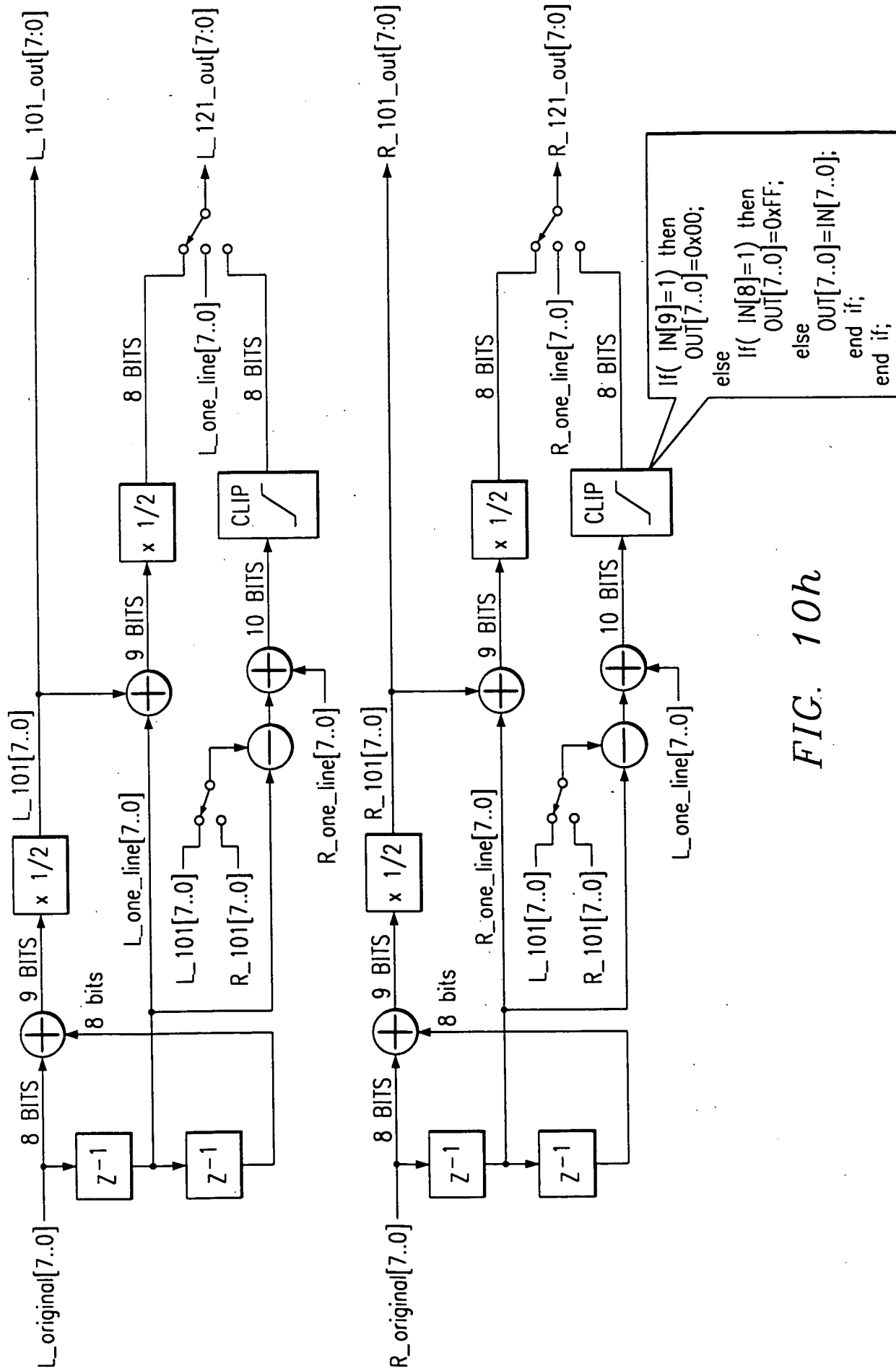
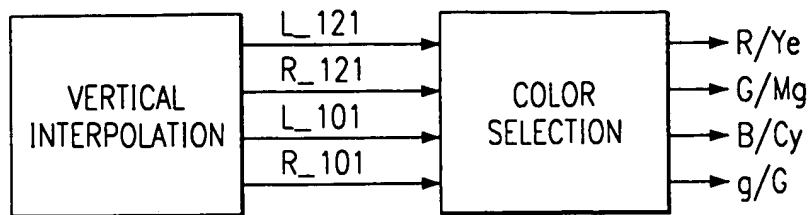


FIG. 10h



NOISE FILTER = OFF

NOISE FILTER = ON

$\left\{ \begin{array}{l} R/Ye = R_{12} \\ G/Mg = g_{12} \\ g/Cy = \frac{G_{02} + G_{22}}{2} \\ B/Cy = \frac{b_{02} + b_{22}}{2} \end{array} \right.$	$\left\{ \begin{array}{l} R/Ye = R_{12} - g_{12} + \frac{G_{02} + 2g_{12} + G_{22}}{4} \\ G/Mg = \frac{G_{02} + 2g_{12} + G_{22}}{4} \\ g/Cy = \frac{G_{02} + G_{22}}{2} \\ B/Cy = \frac{b_{02} + b_{22}}{2} \end{array} \right.$
---	---

FIG. 10i

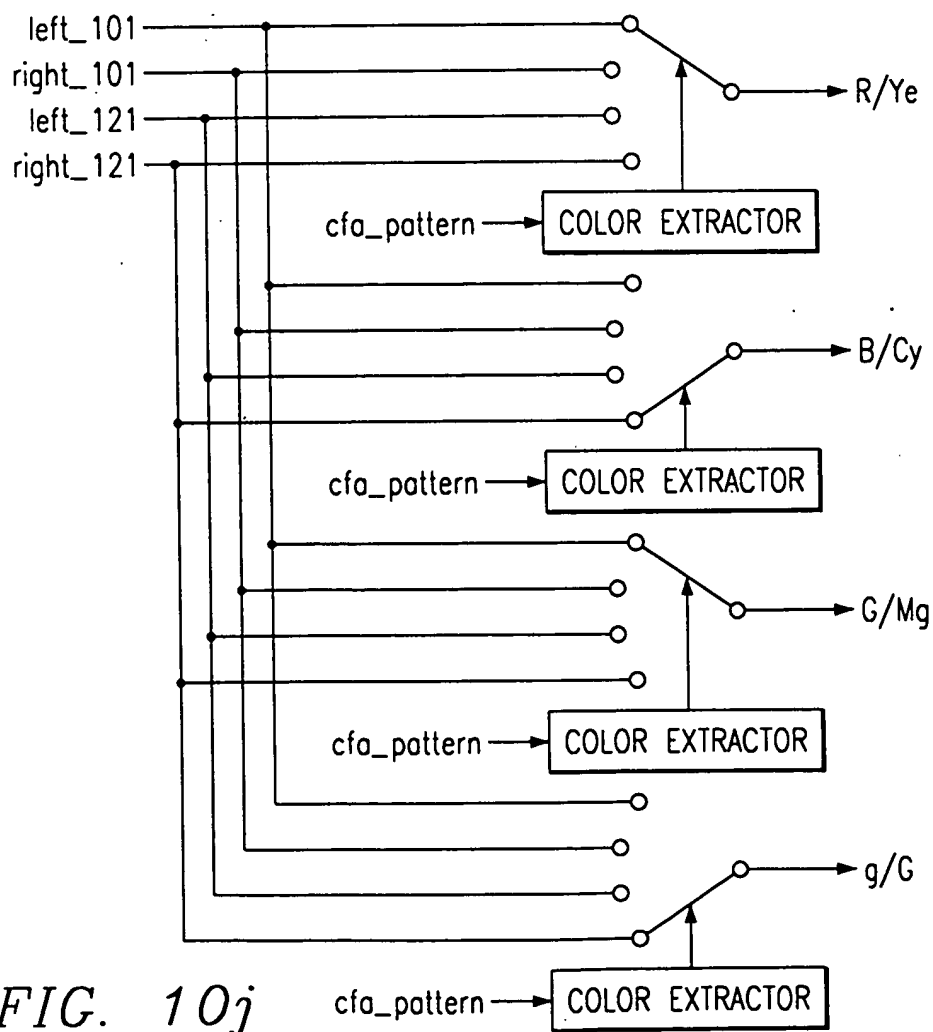
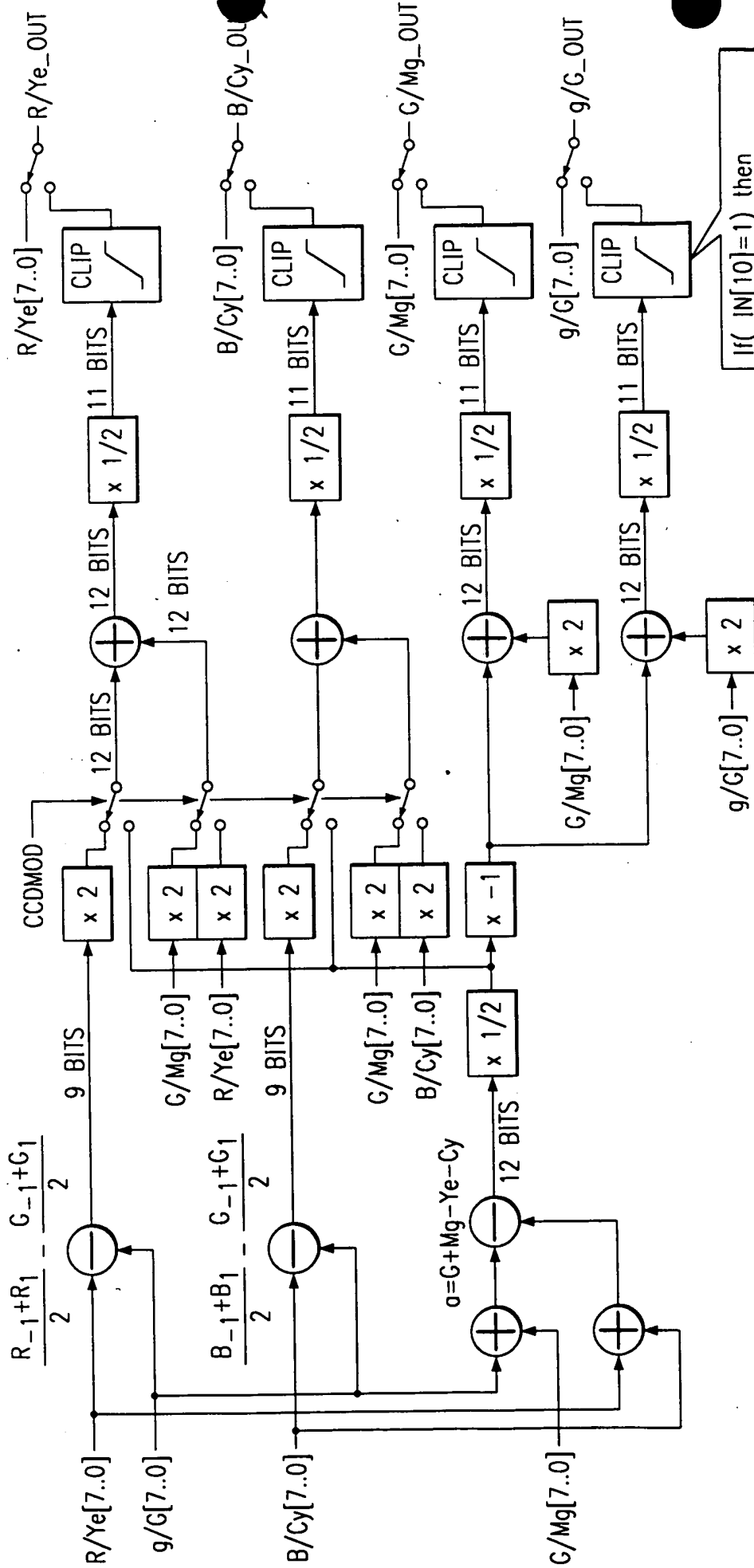


FIG. 10j



```

If( IN[10]=1) then
  OUT[7..0]=0x00;
else
  If( IN[9..8]="00") then
    OUT[7..0]=IN[7..0];
  else
    OUT[7..0]=0xFF;
  end if;
end if;

```

FIG. 10k

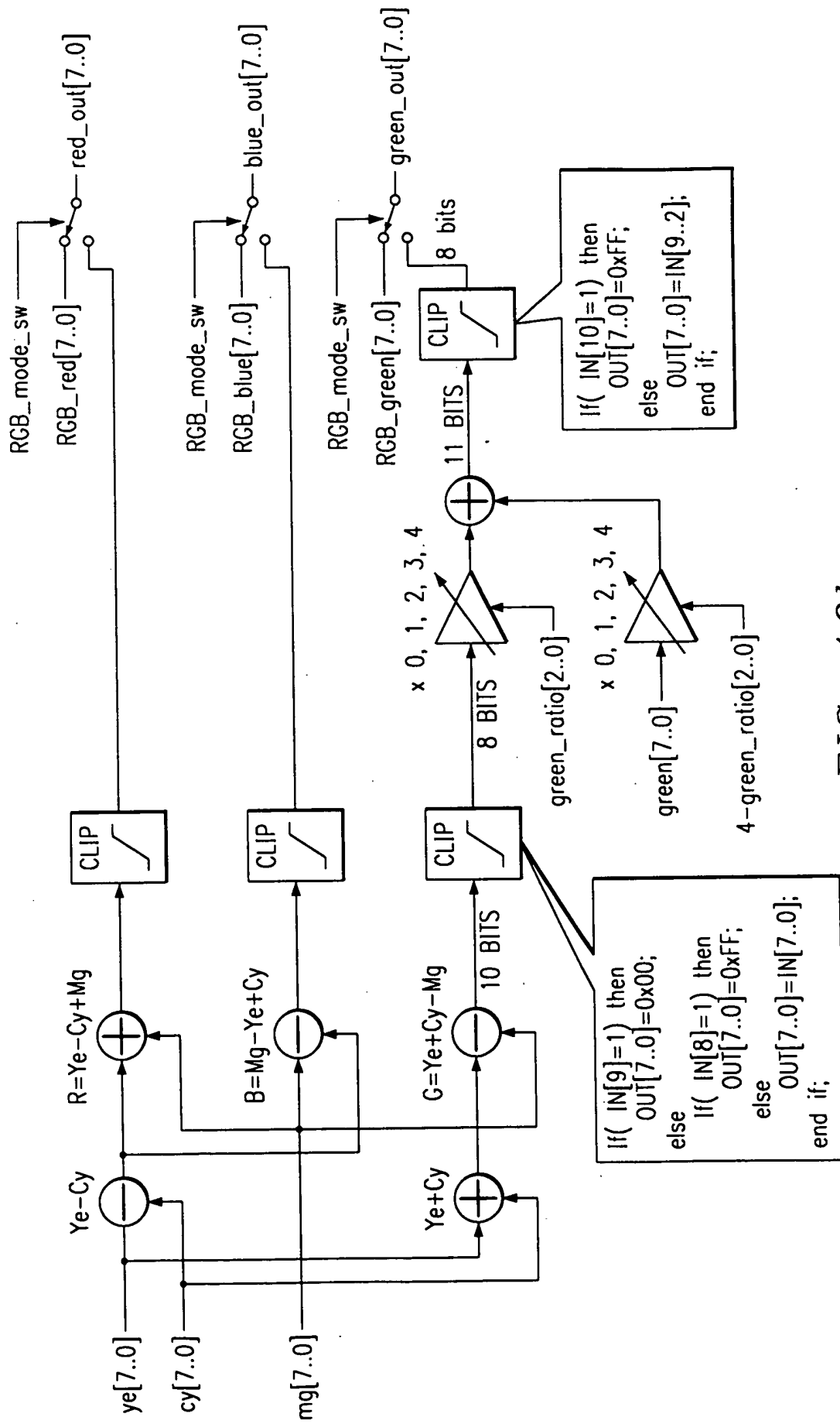


FIG. 10L



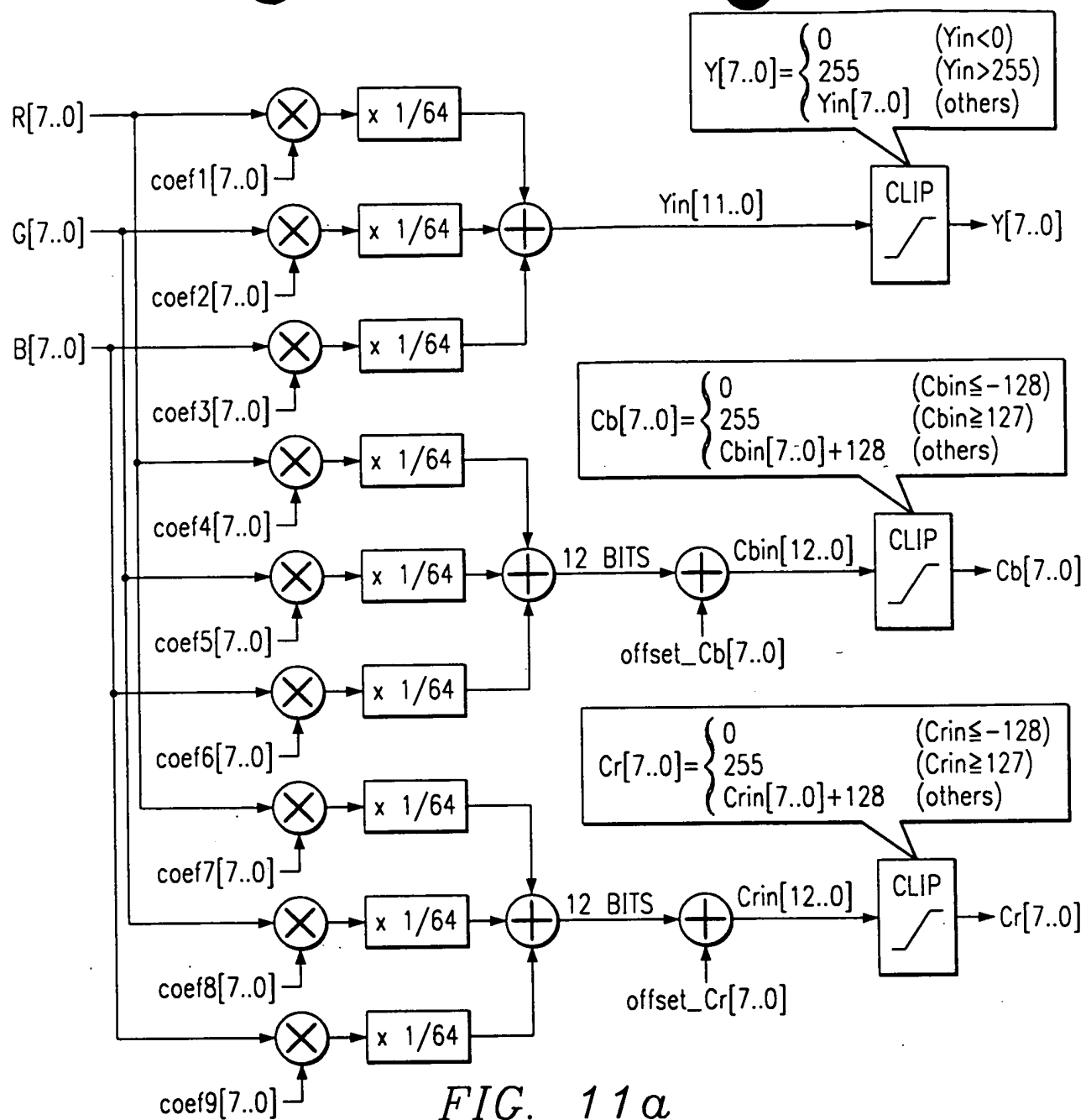


FIG. 11a

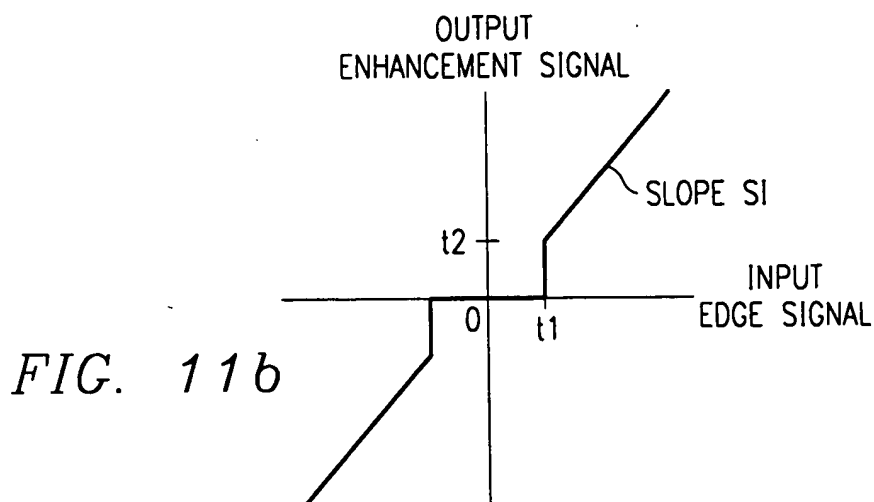


FIG. 11b

FIG. 12a

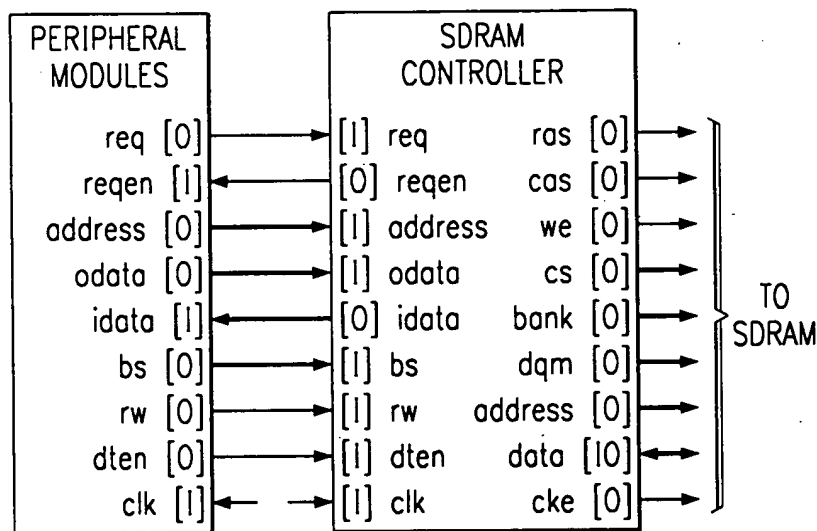
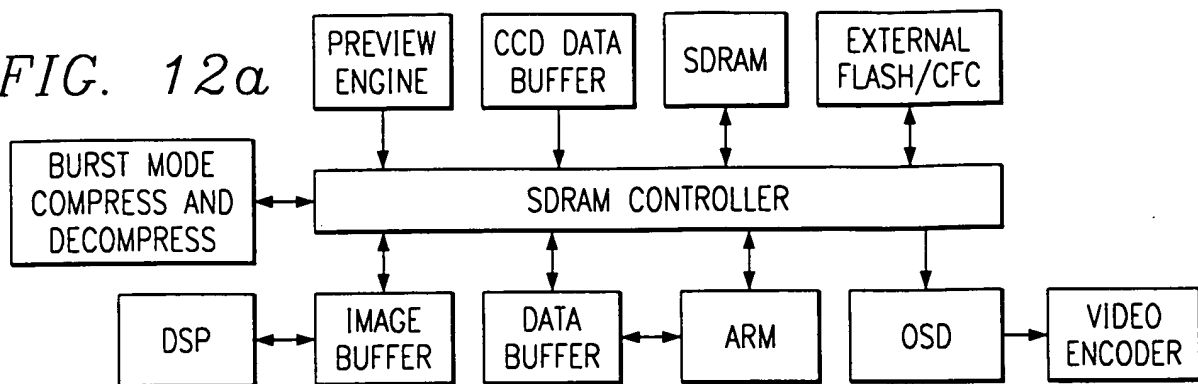


FIG. 12b

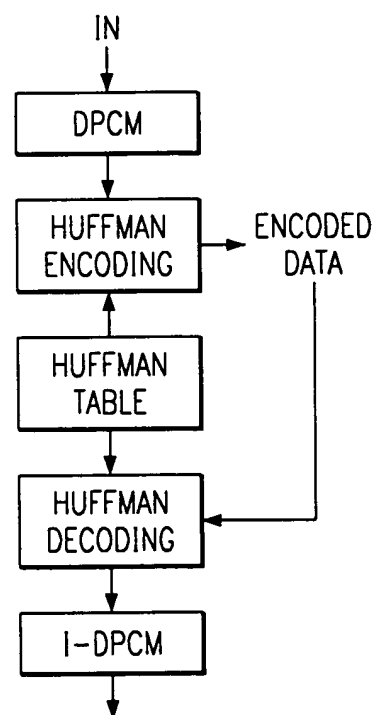


FIG. 13b

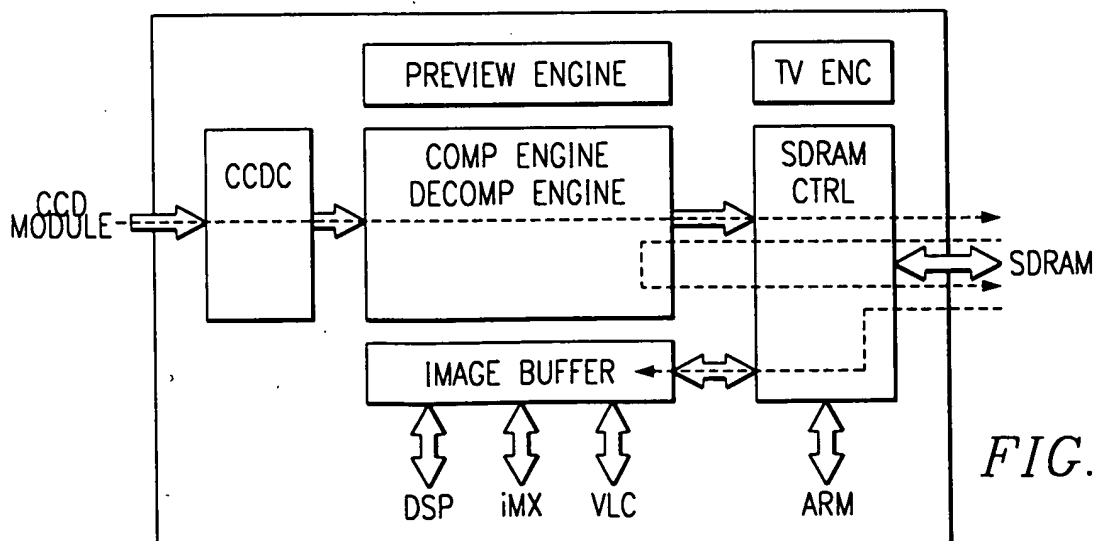


FIG. 13a

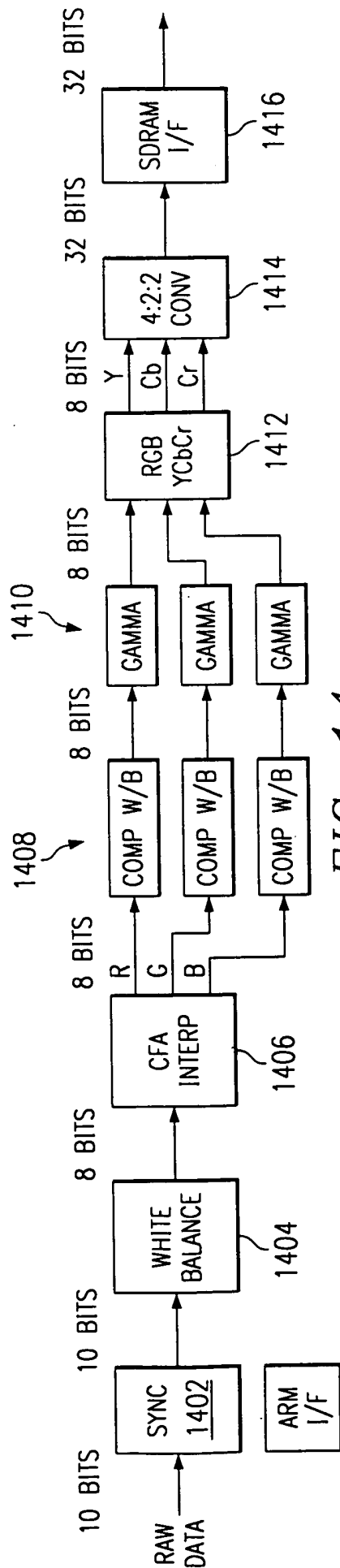


FIG. 14

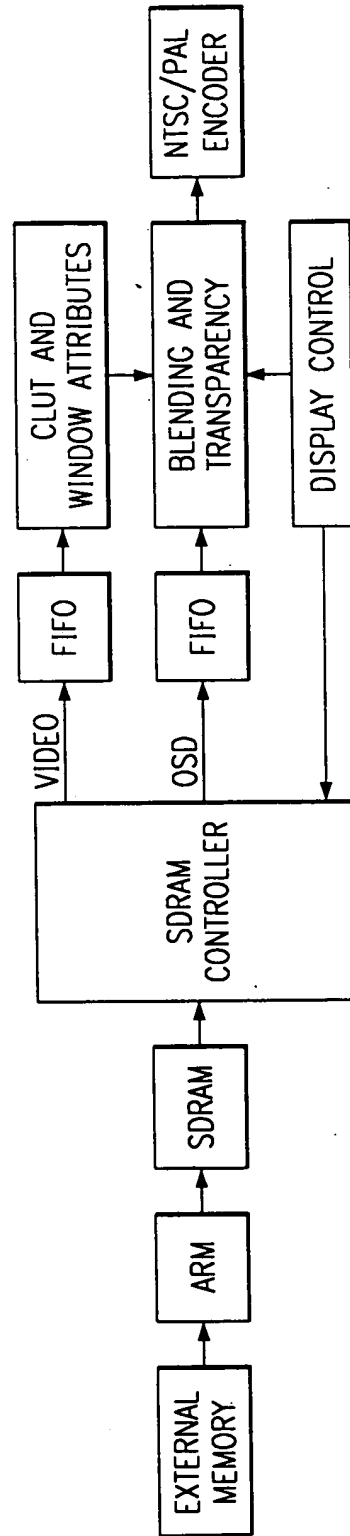


FIG. 15

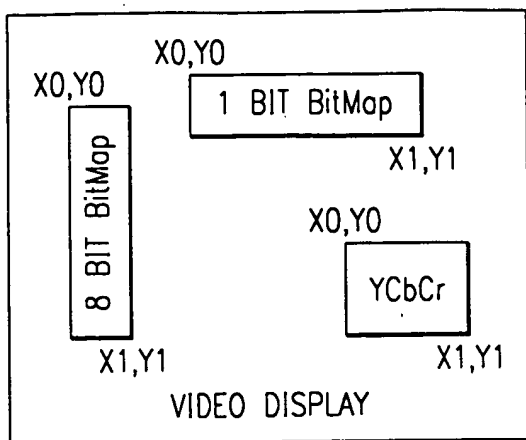


FIG. 16

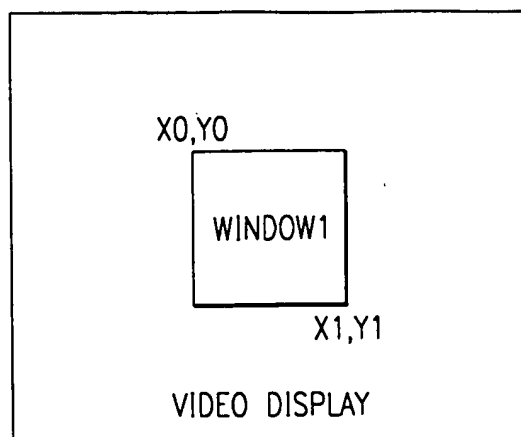


FIG. 17

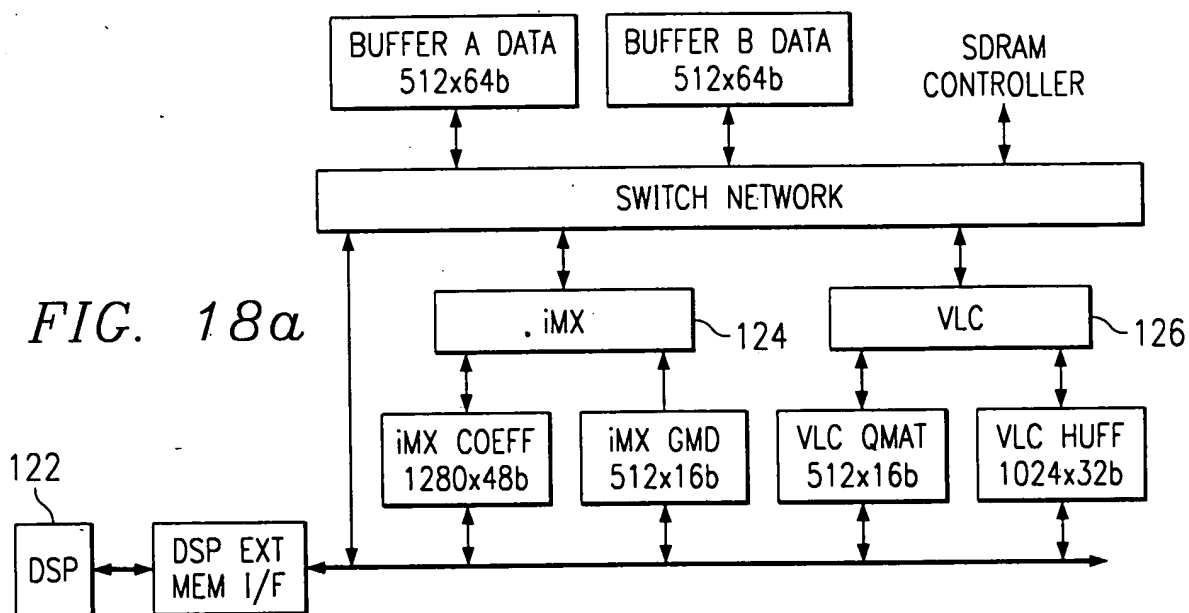


FIG. 18a

PROGRAM SPACE (MP/MC_=0)		DATA SPACE	
0000h	RESERVED (OVLY=1)	0000h	MMR
0080h	ON-CHIP 32kword DARAM (OVLY=1)	0060h	SCRATCH-PAD RAM
7F80h	VECTORS	0080h	ON-CHIP 32kword DARAM (OVLY=1)
8000h	EXTERNAL	7F80h	RESERVED
C000h	RESERVED	8000h	EXTERNAL
FF80h	RESET VECTOR	C000h	RESERVED
FFFFh		FFFFh	

FIG. 18b

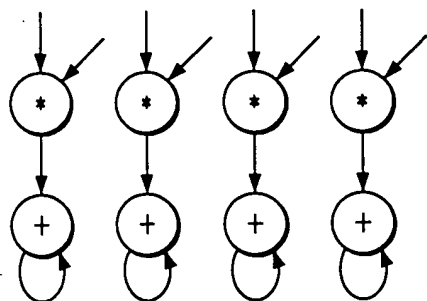


FIG. 19

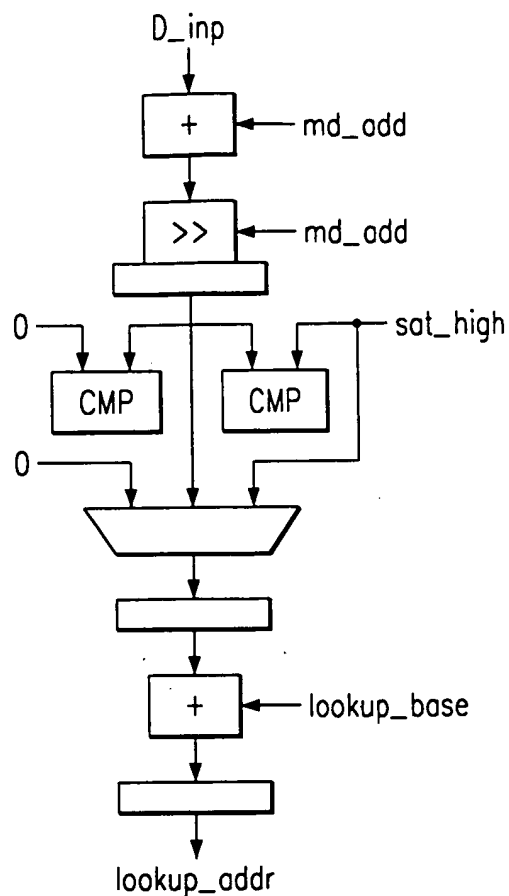


FIG. 21

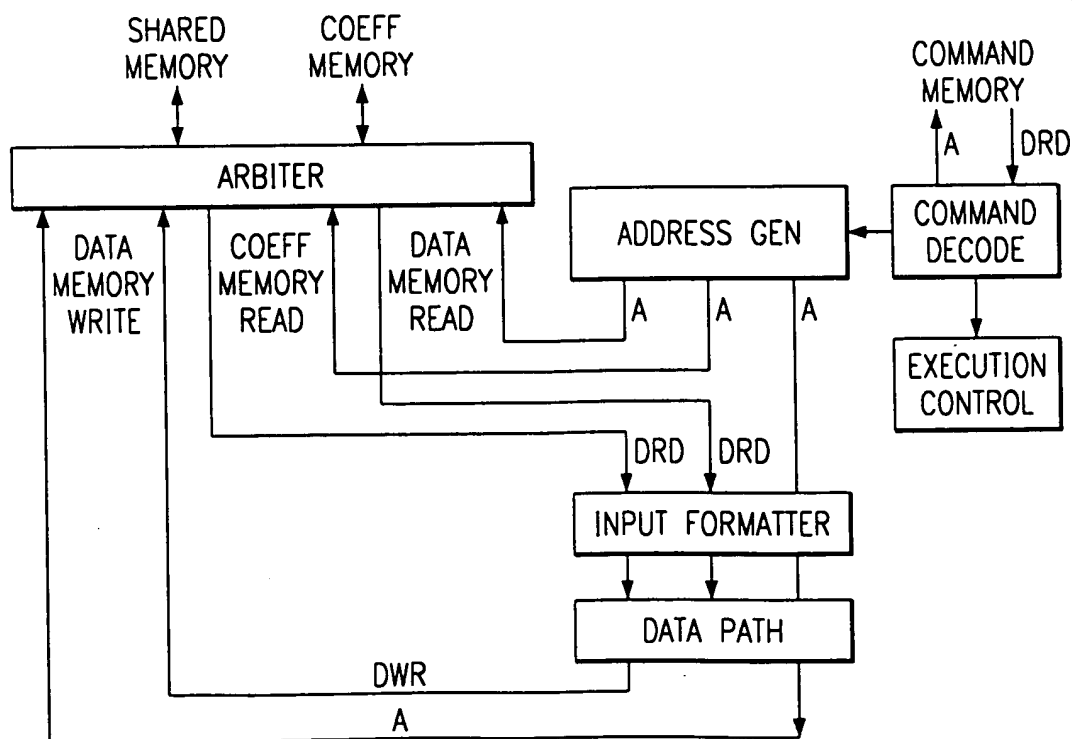


FIG. 20

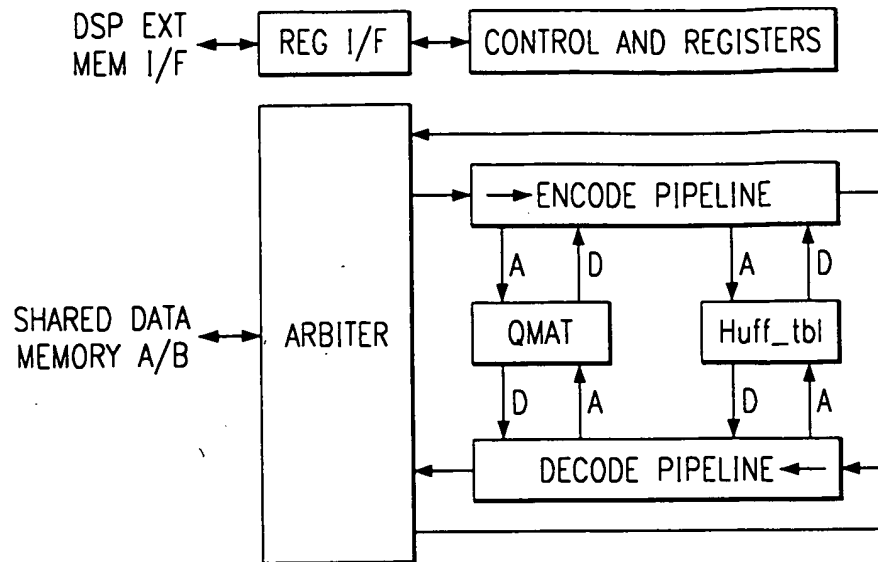


FIG. 22

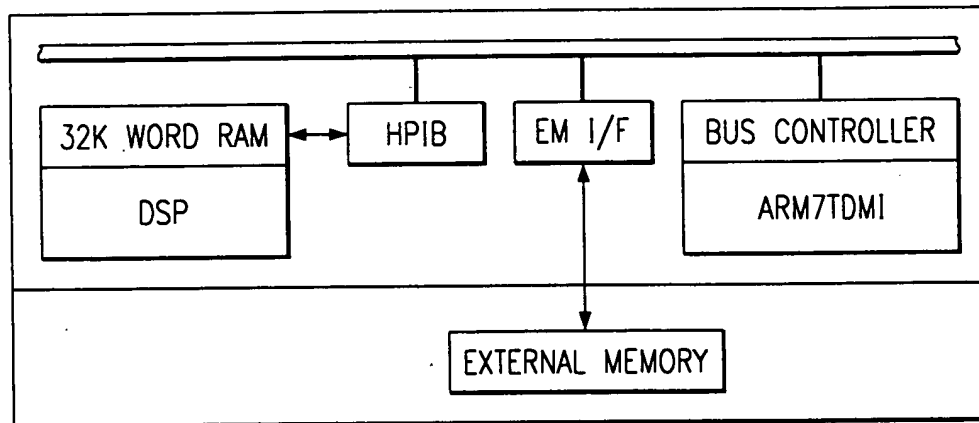


FIG. 23a

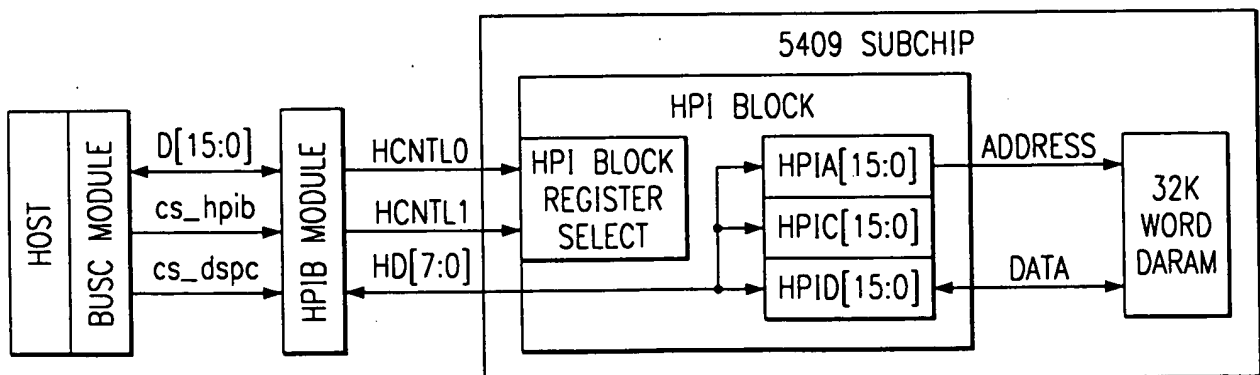


FIG. 23b

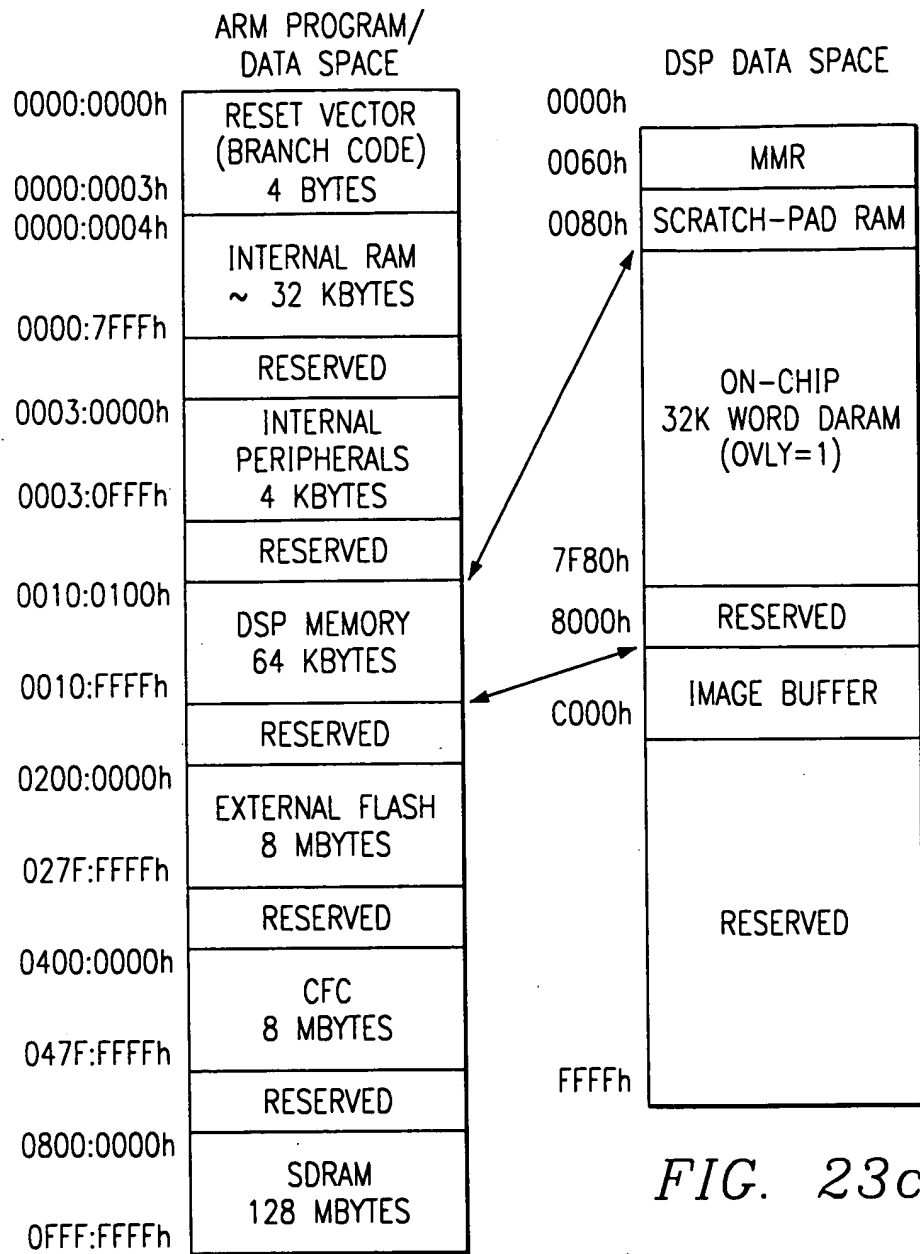
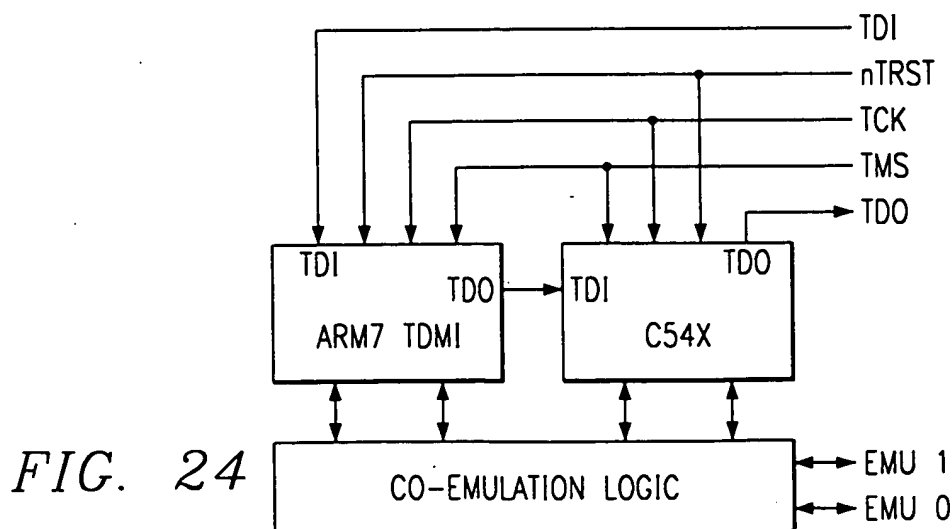


FIG. 23c



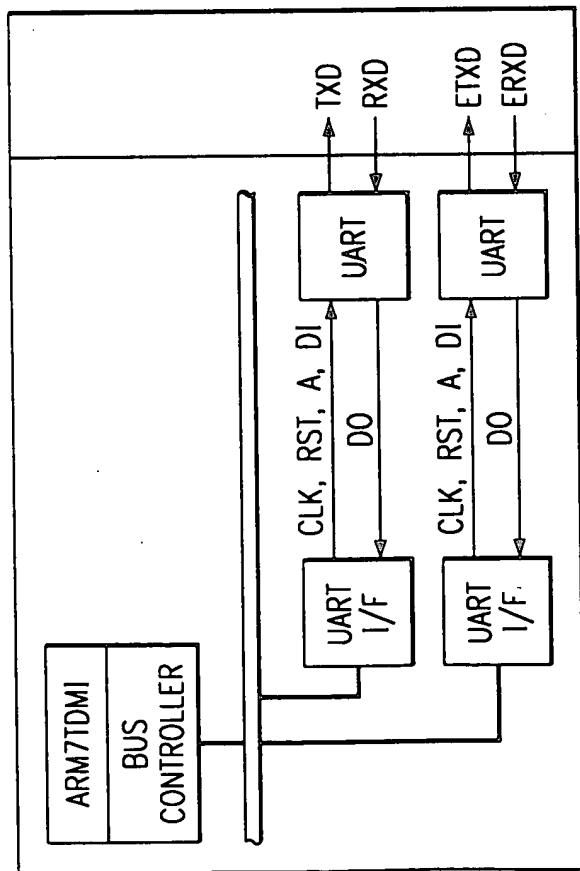


FIG. 25

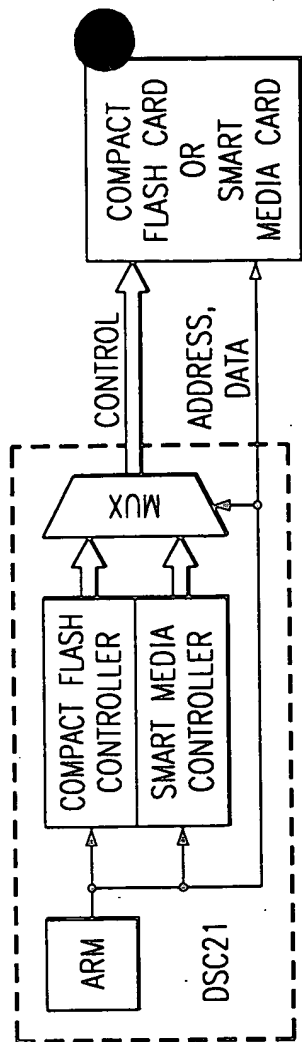


FIG. 26

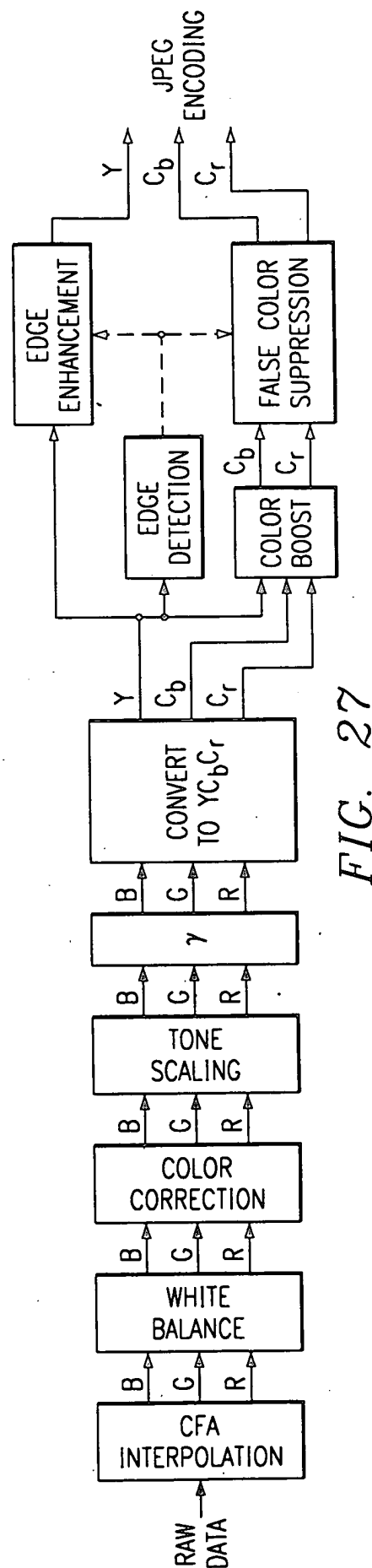


FIG. 27



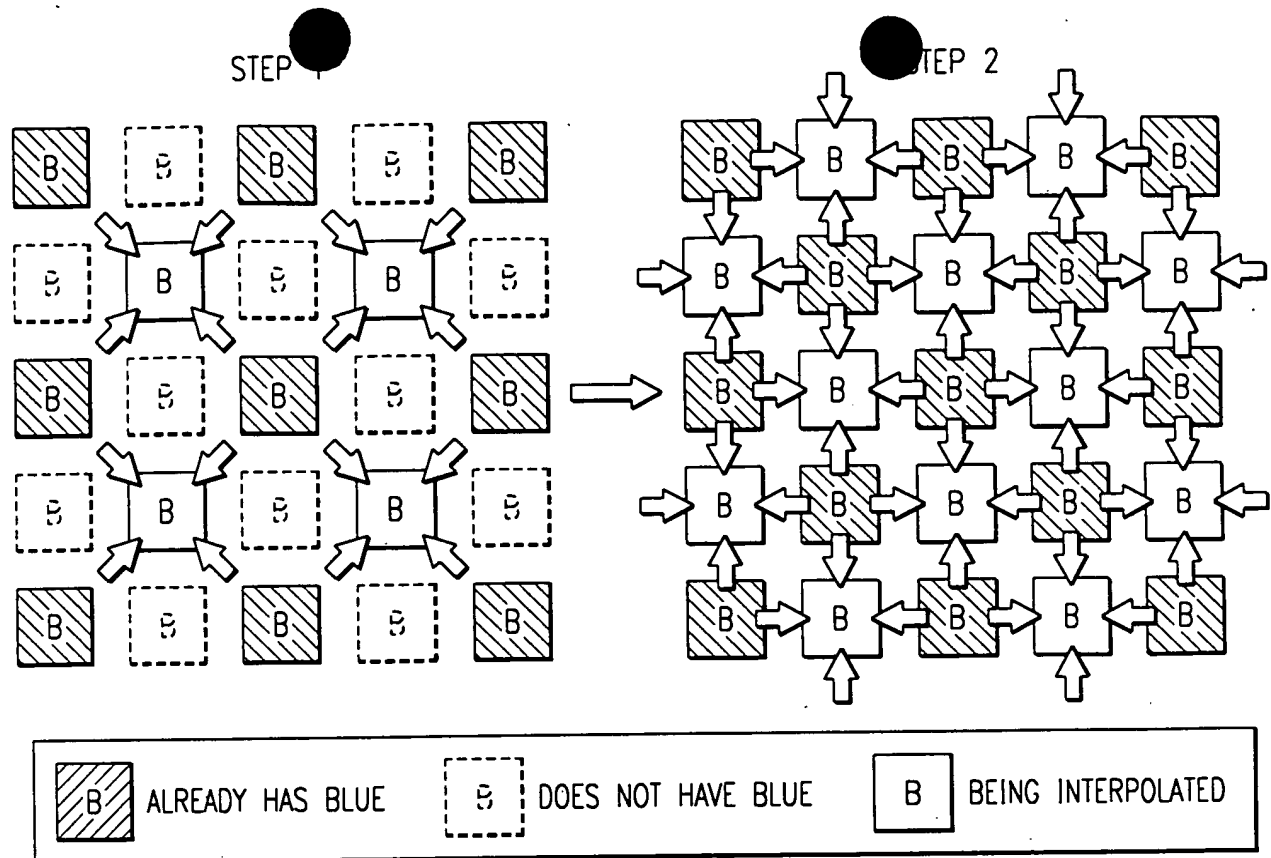


FIG. 28

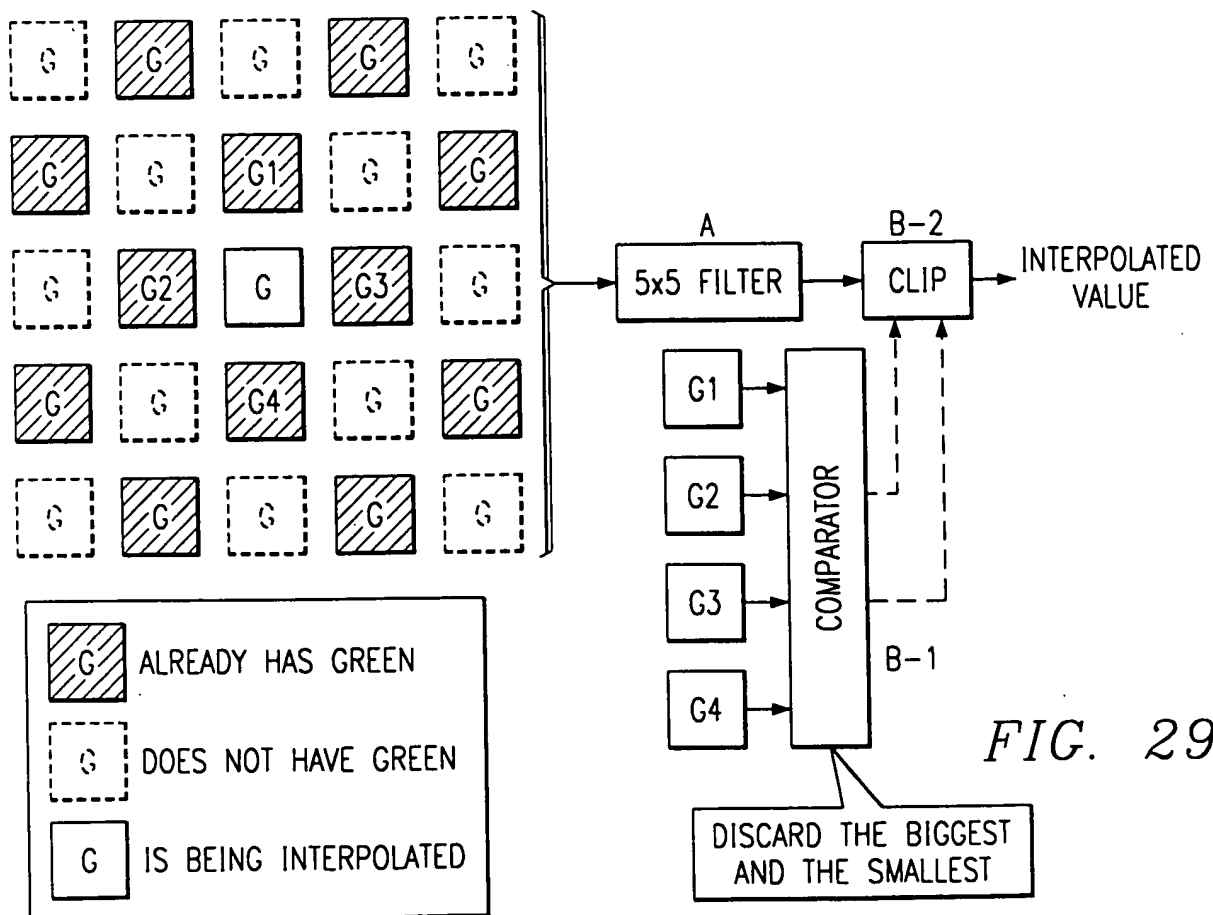


FIG. 29

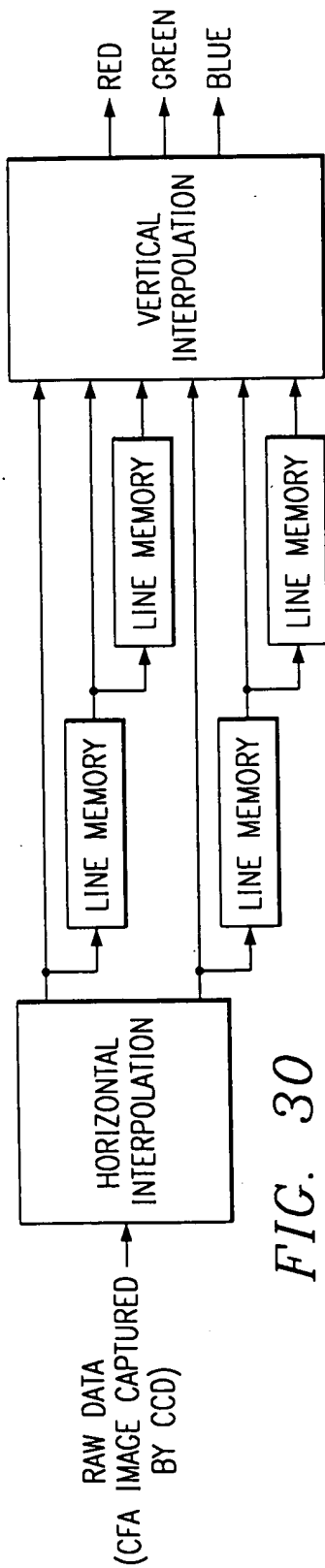
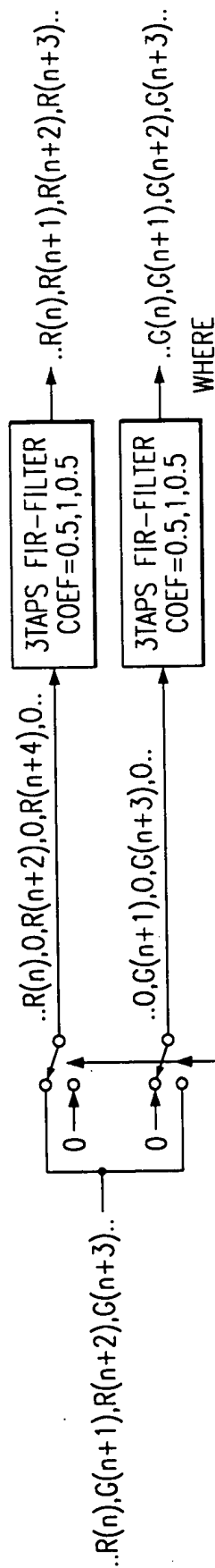


FIG. 30

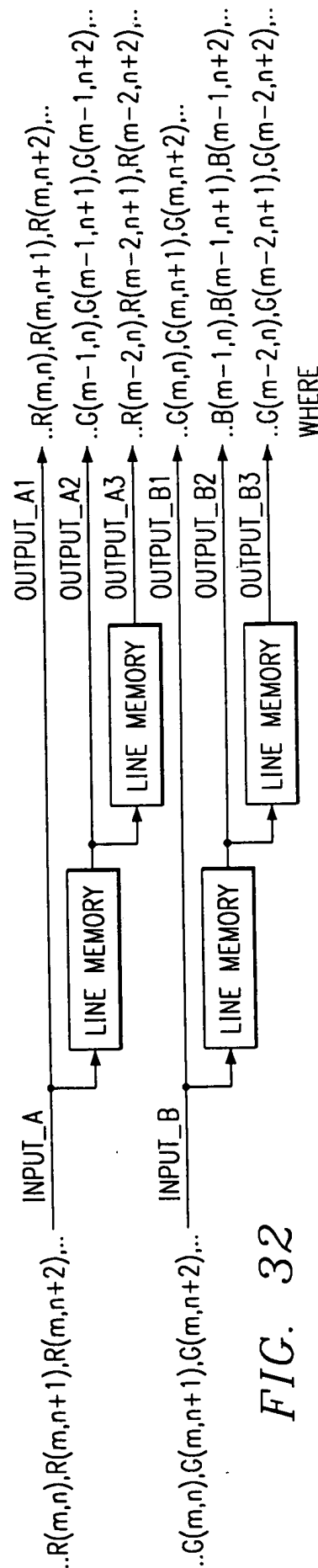


WHERE

$$R(n+1) = (R(n) + R(n+2)) / 2$$

$$G(n+2) = (G(n+1) + G(n+3)) / 2$$

FIG. 31



WHERE

$$G(y,x) \text{ IS A DATA AT THE POSITION}$$

$$"VERTICAL=y/HORIZONTAL=x"$$

FIG. 32

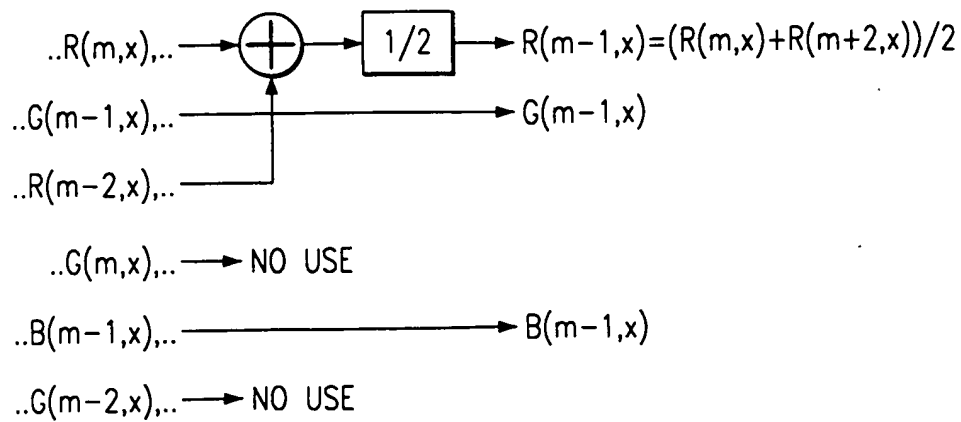


FIG. 33a

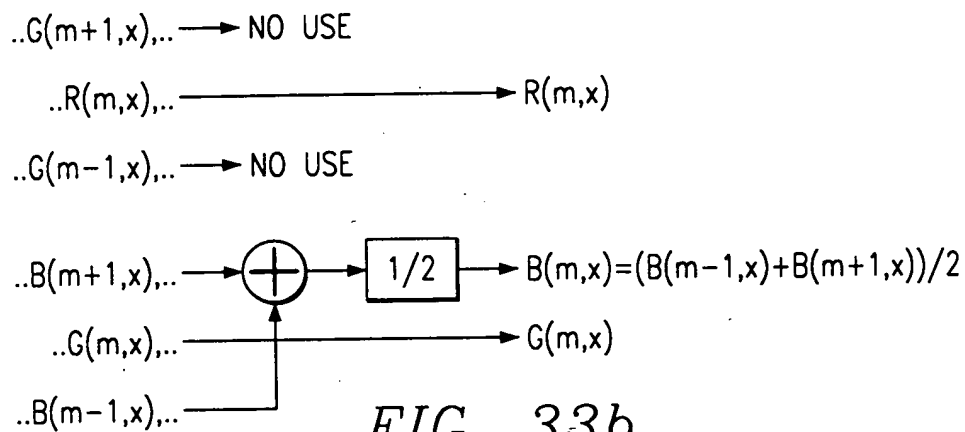


FIG. 33b

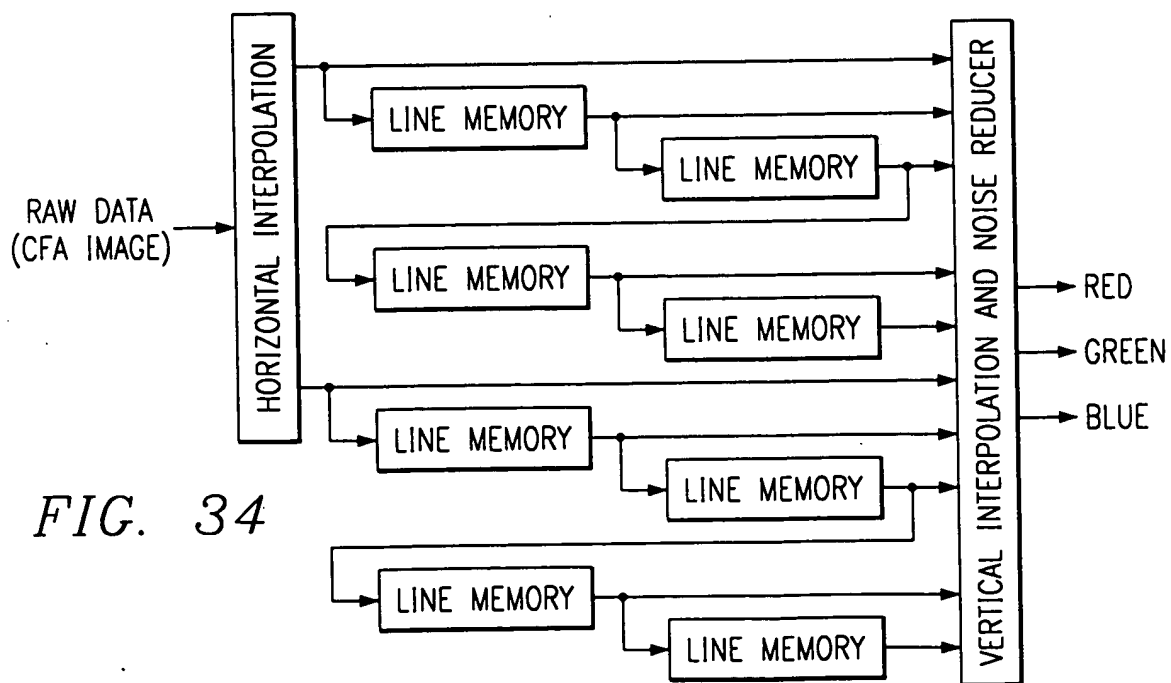
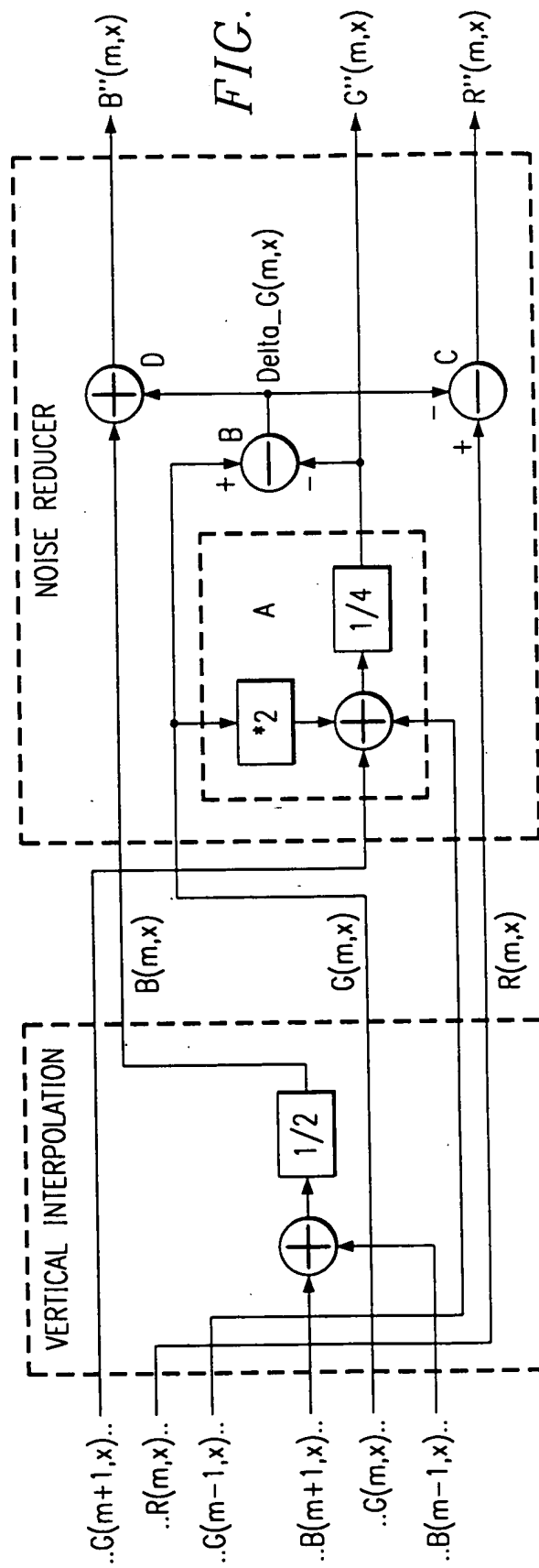
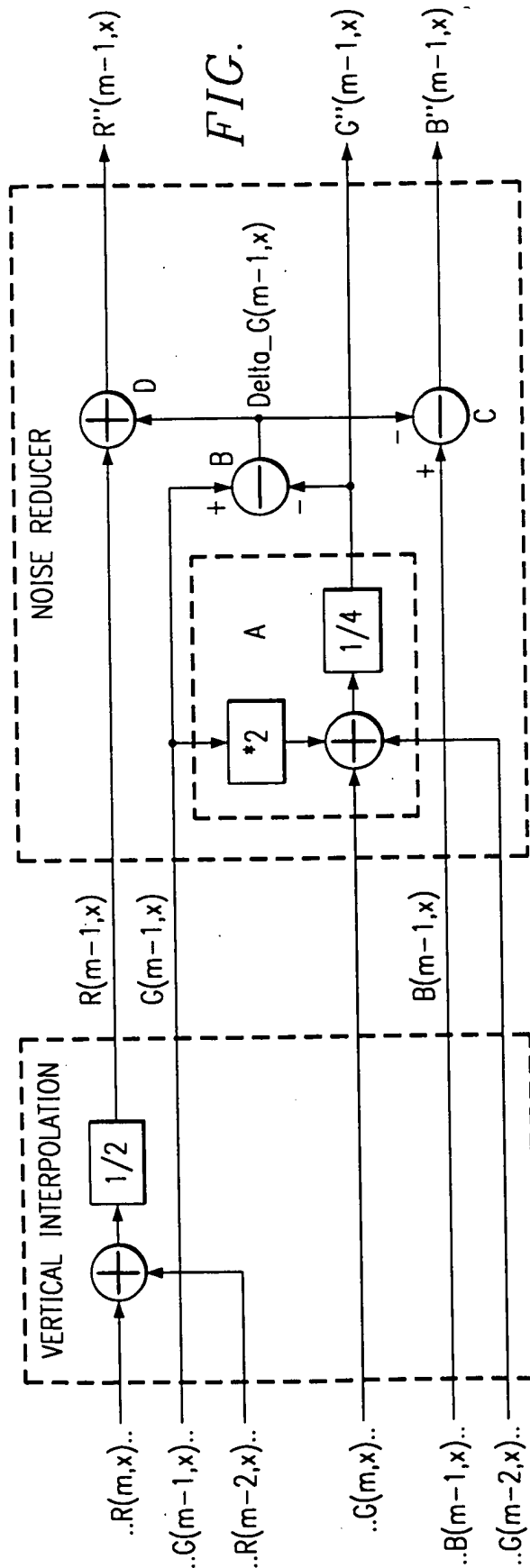
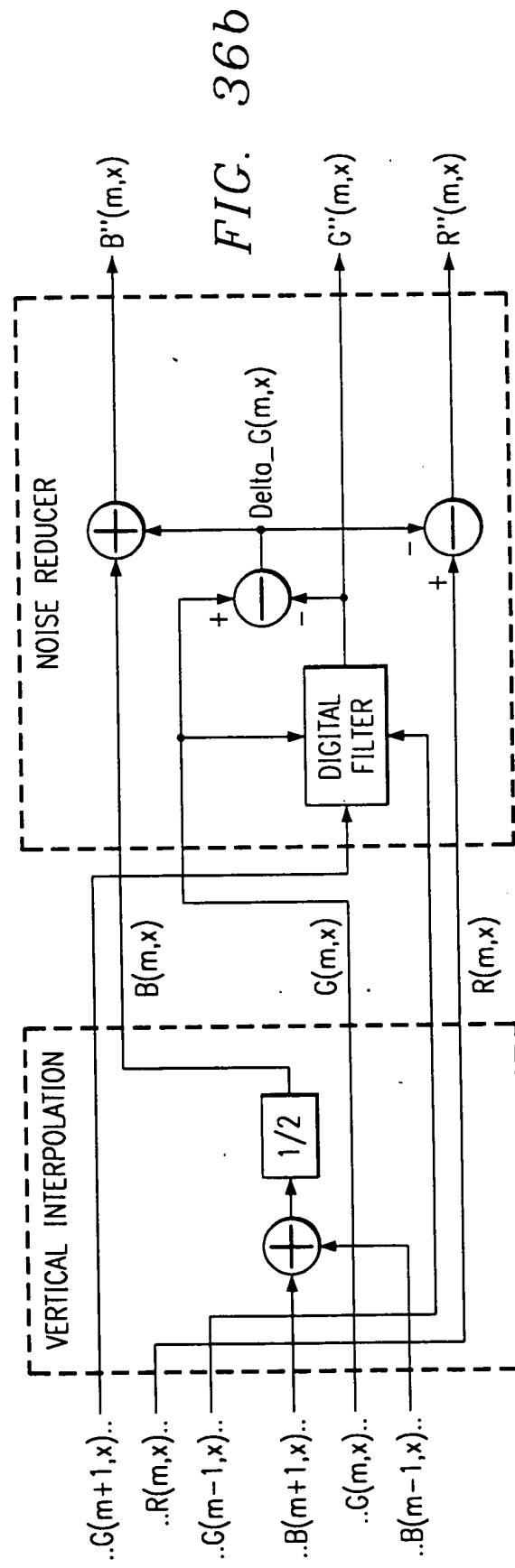
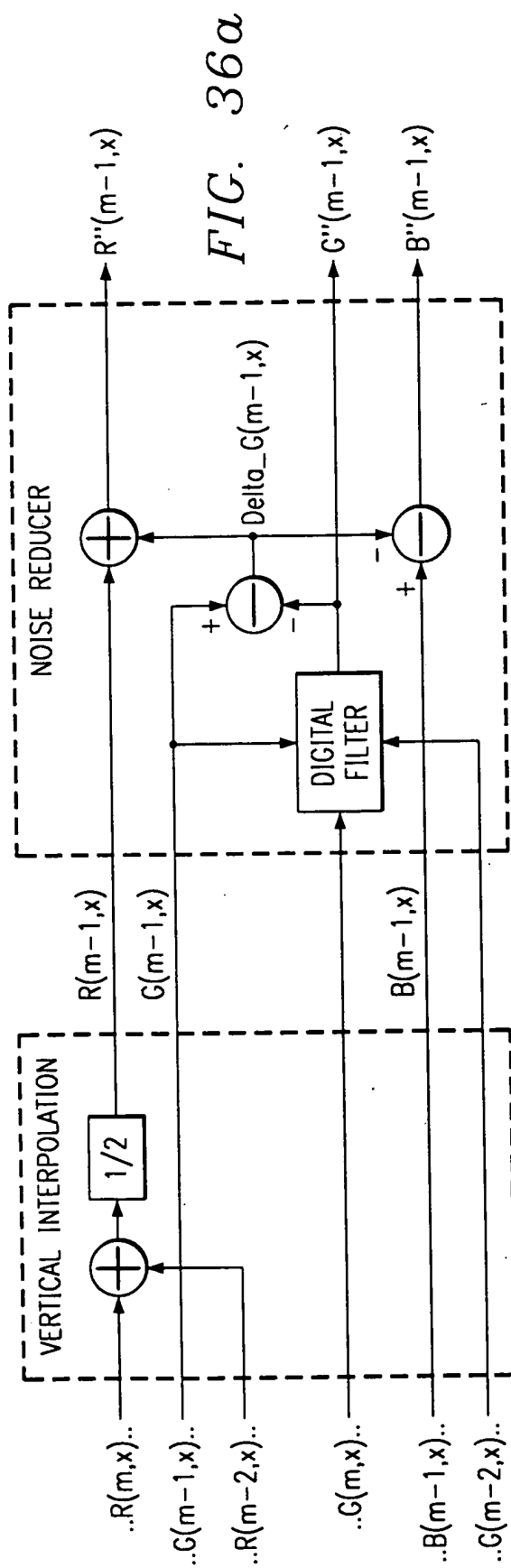


FIG. 34





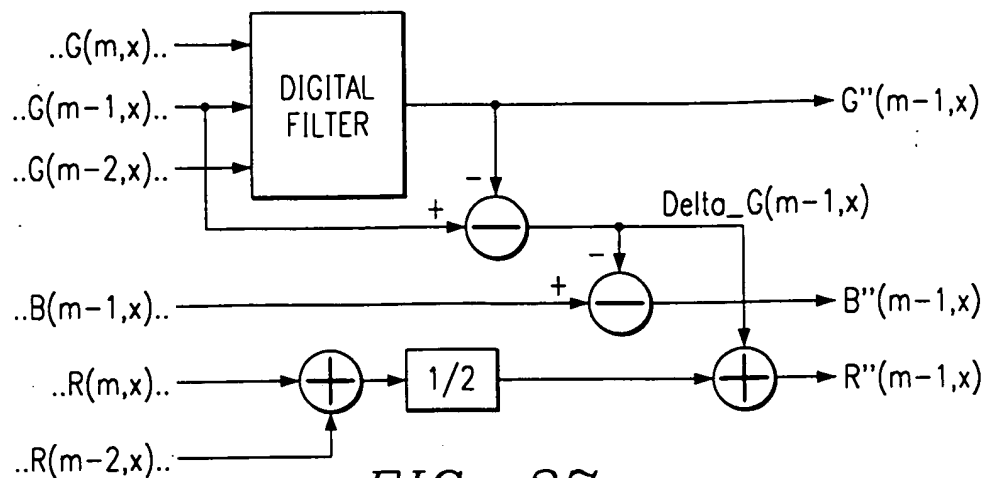


FIG. 37a

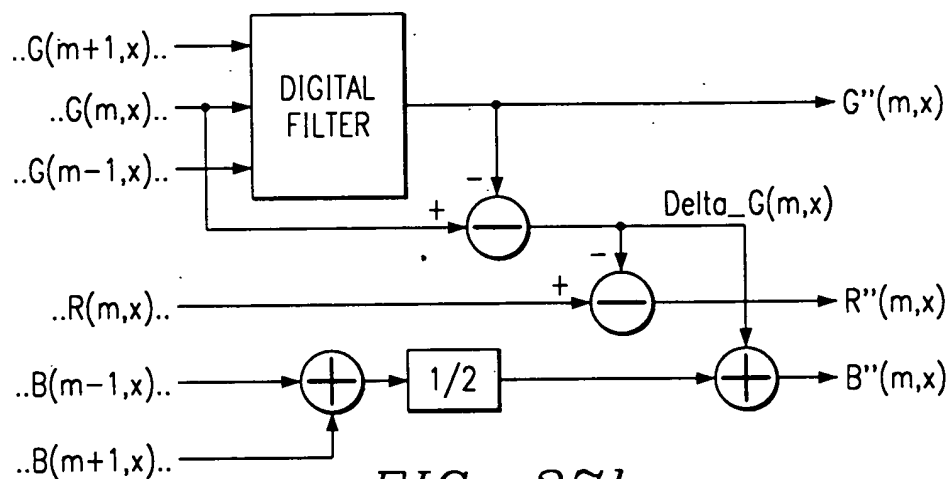


FIG. 37b

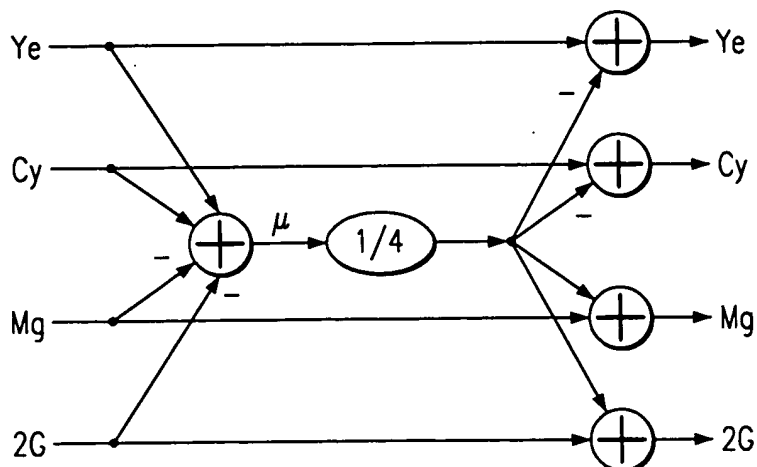


FIG. 38

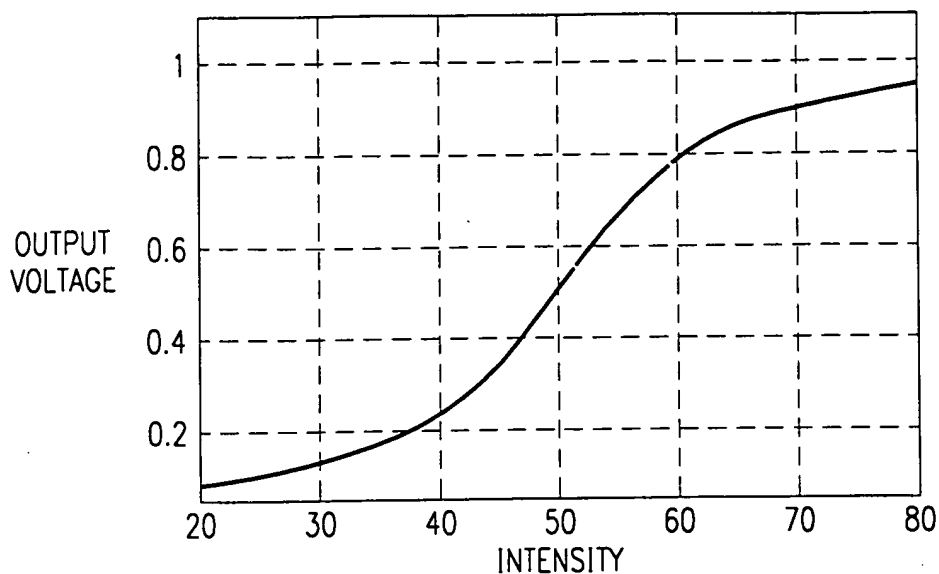


FIG. 39a

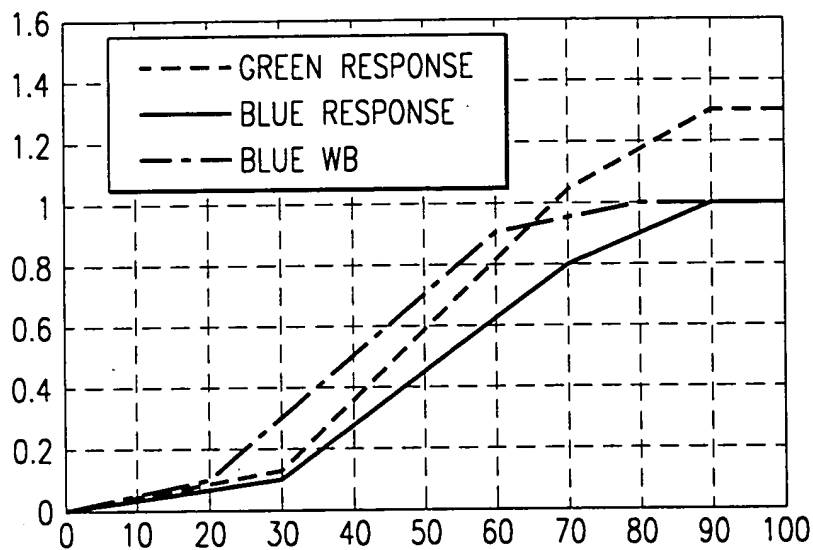


FIG. 39b

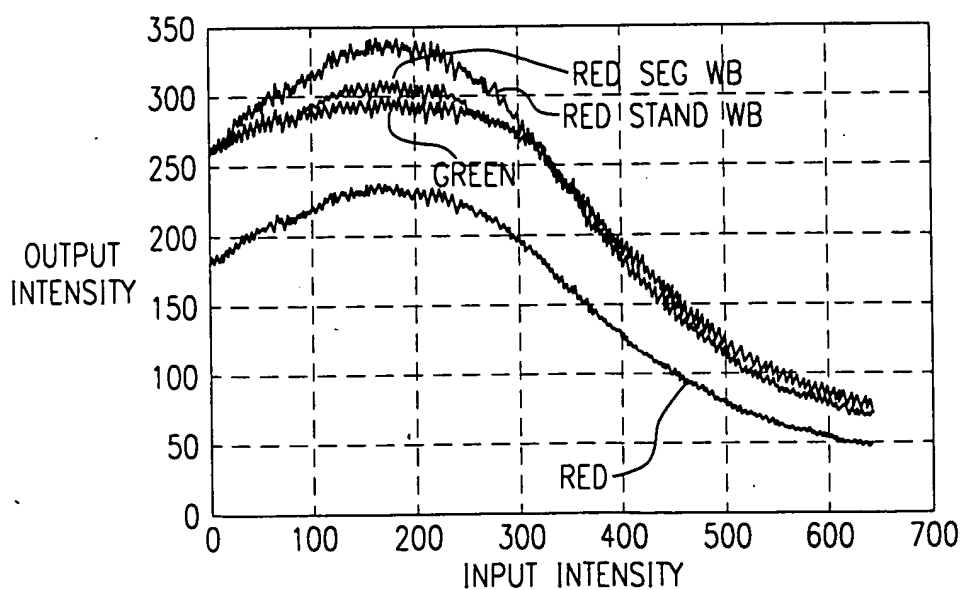


FIG. 40

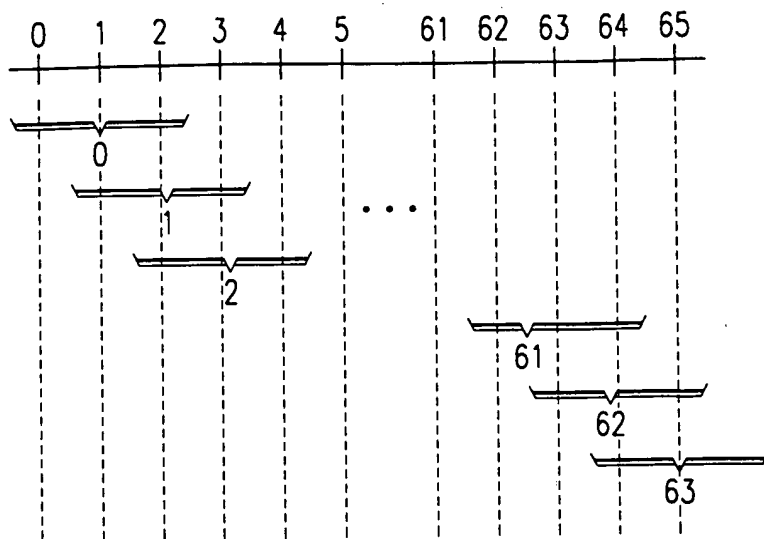


FIG. 41a

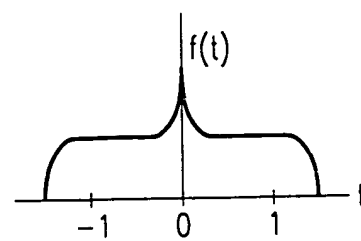


FIG. 41b

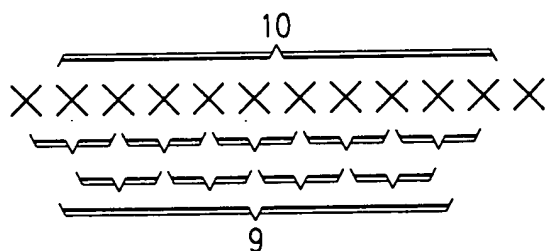


FIG. 42a

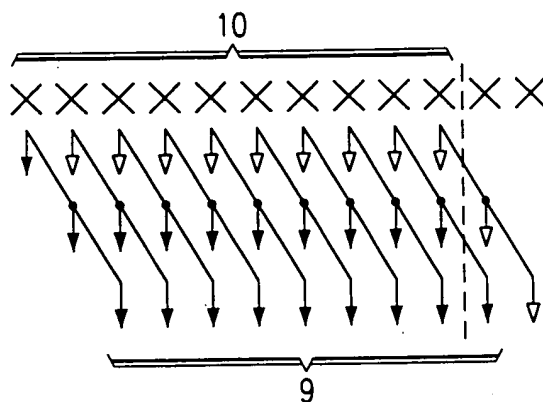


FIG. 42b

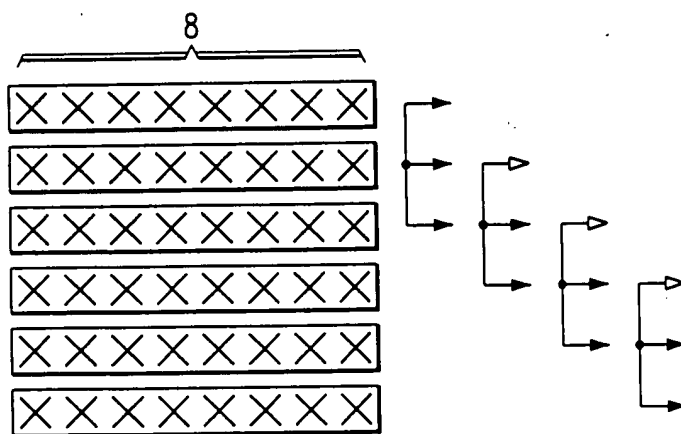


FIG. 42e



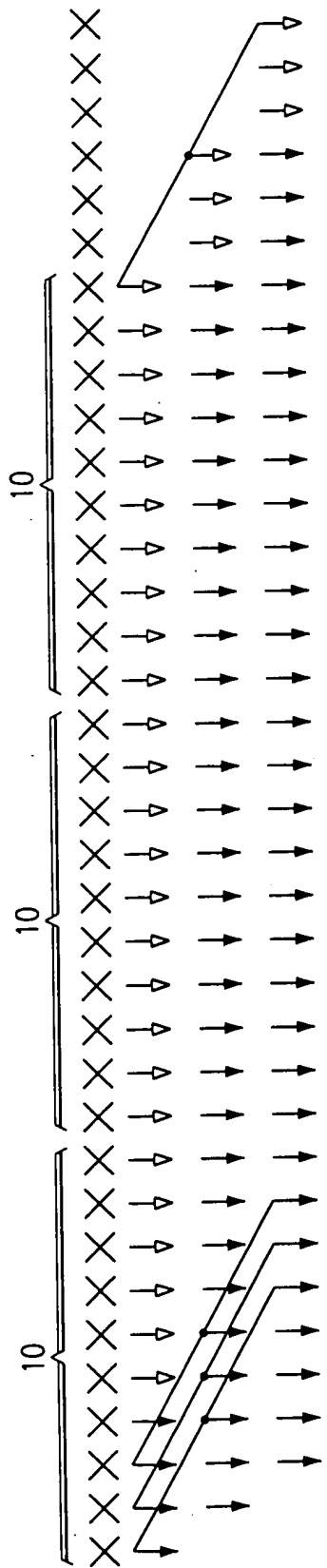


FIG. 42c

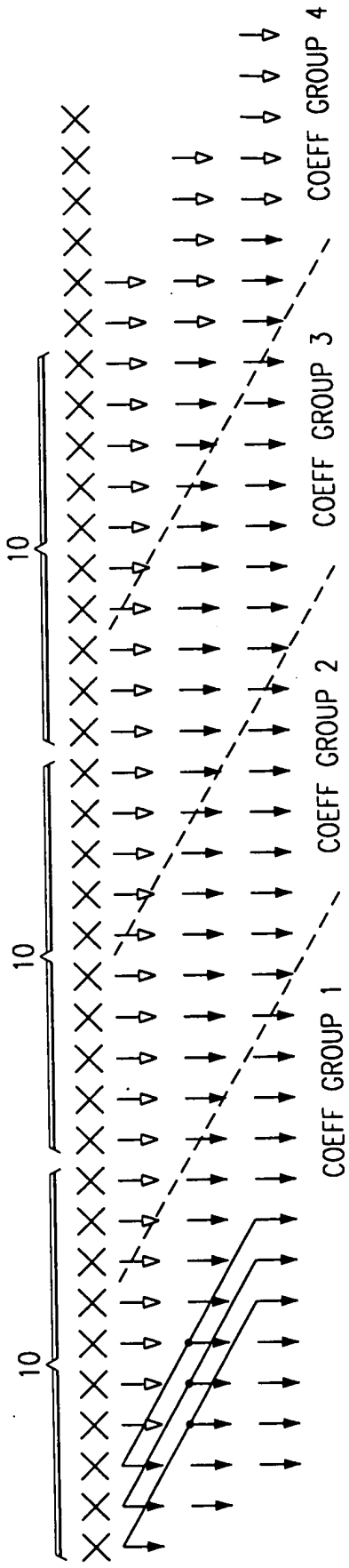


FIG. 42d

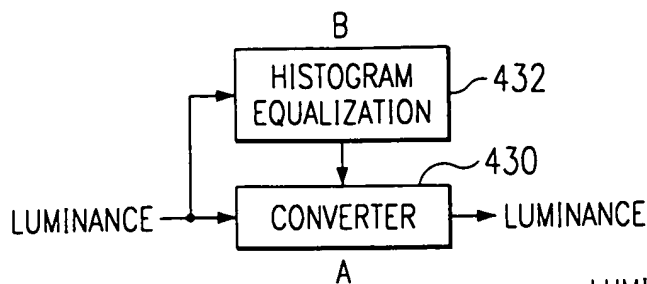


FIG. 43

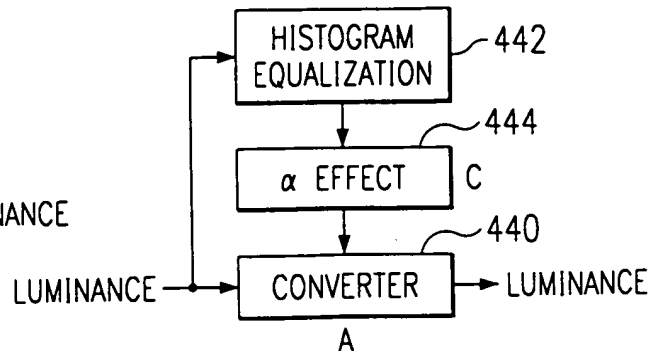


FIG. 44

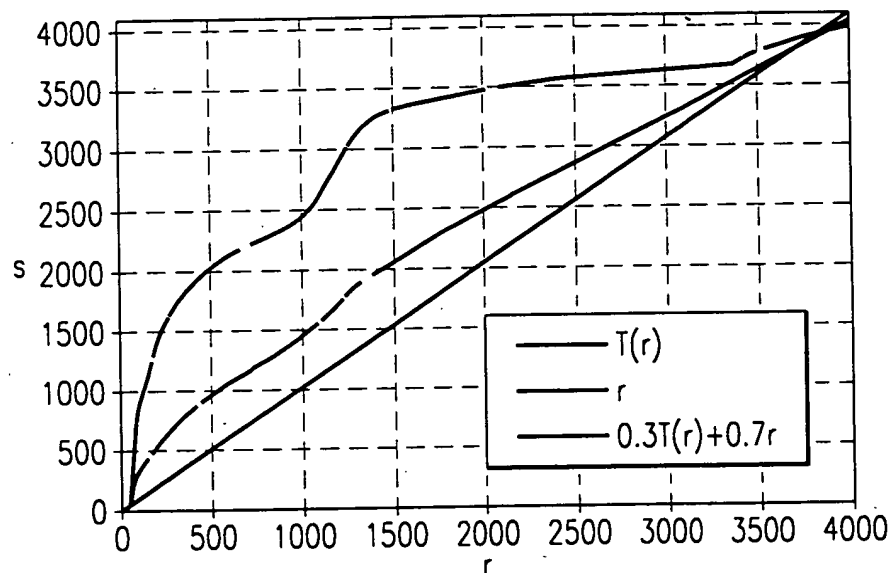


FIG. 45

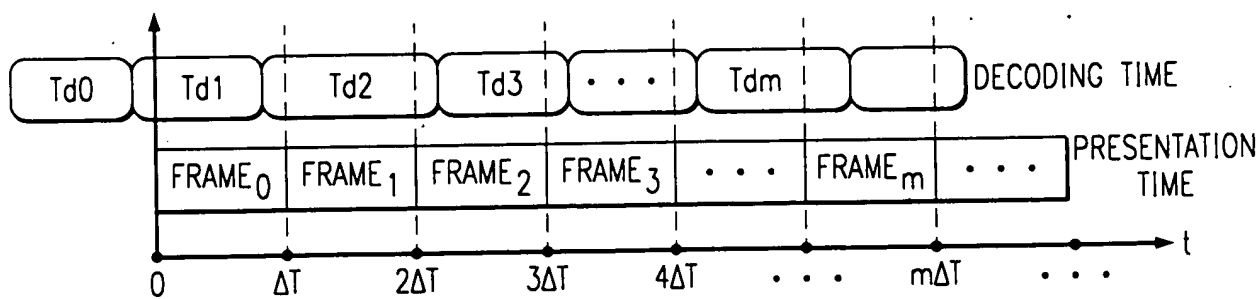


FIG. 46a

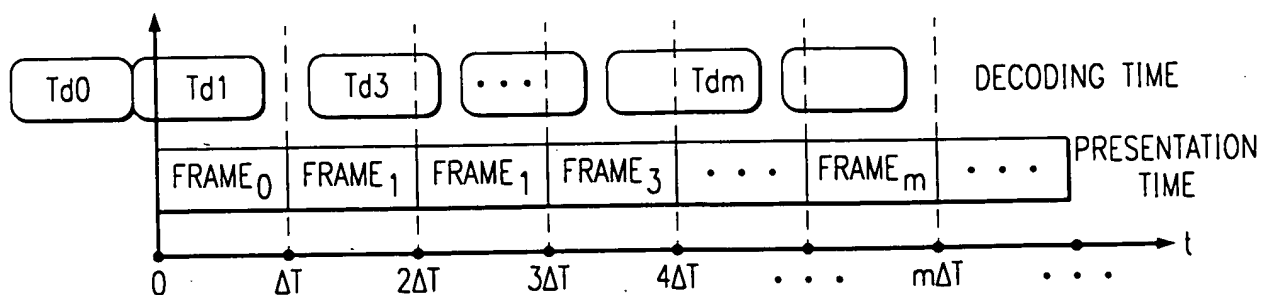


FIG. 46b

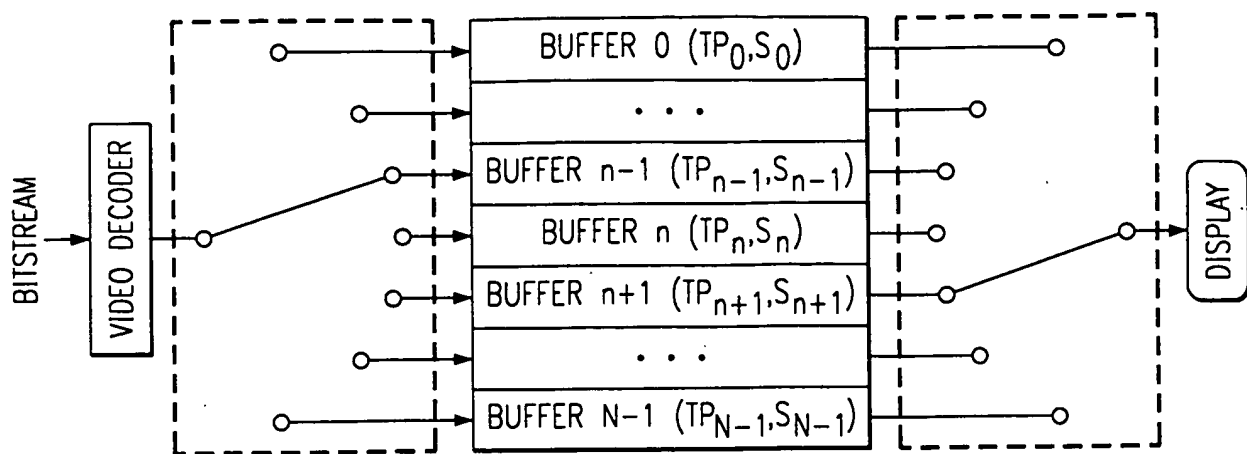


FIG. 47

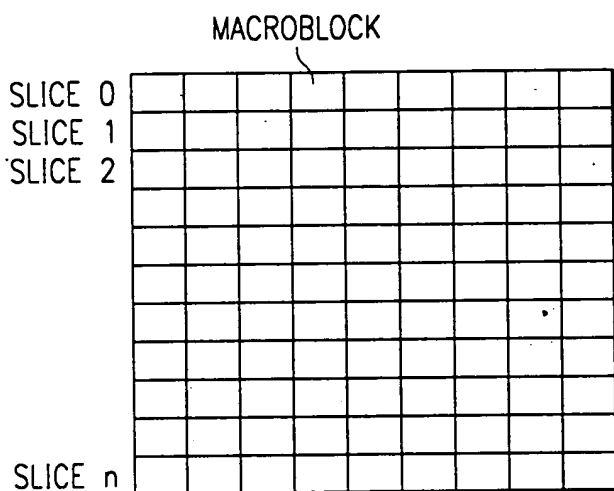


FIG. 49

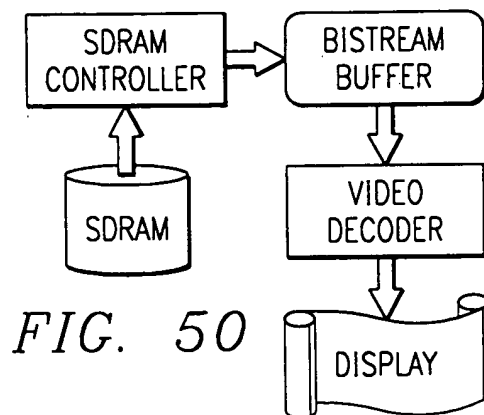


FIG. 50

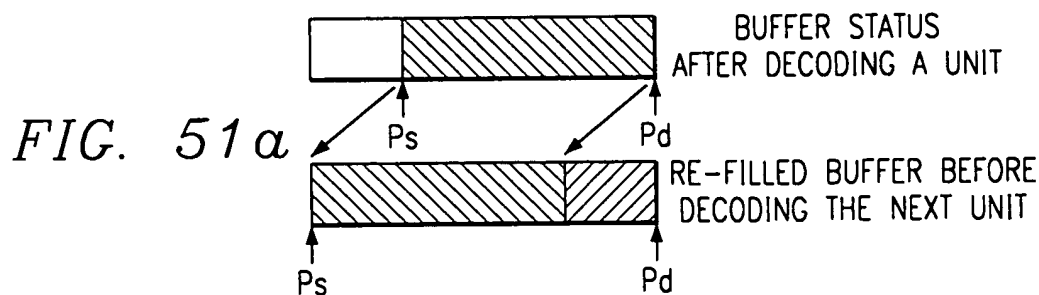


FIG. 51a

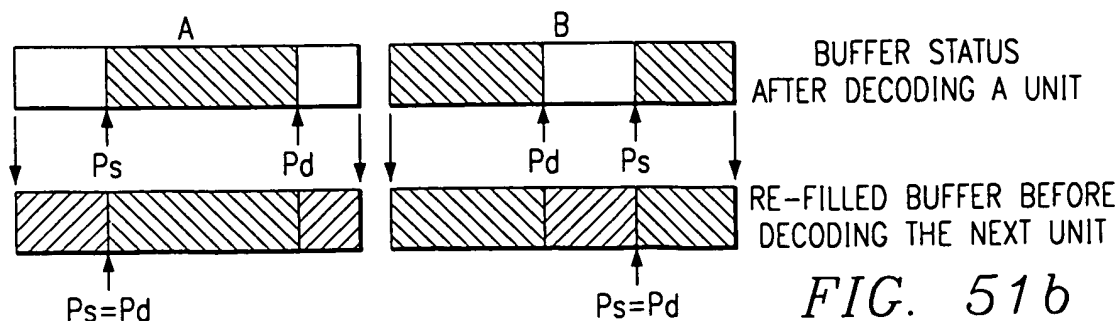
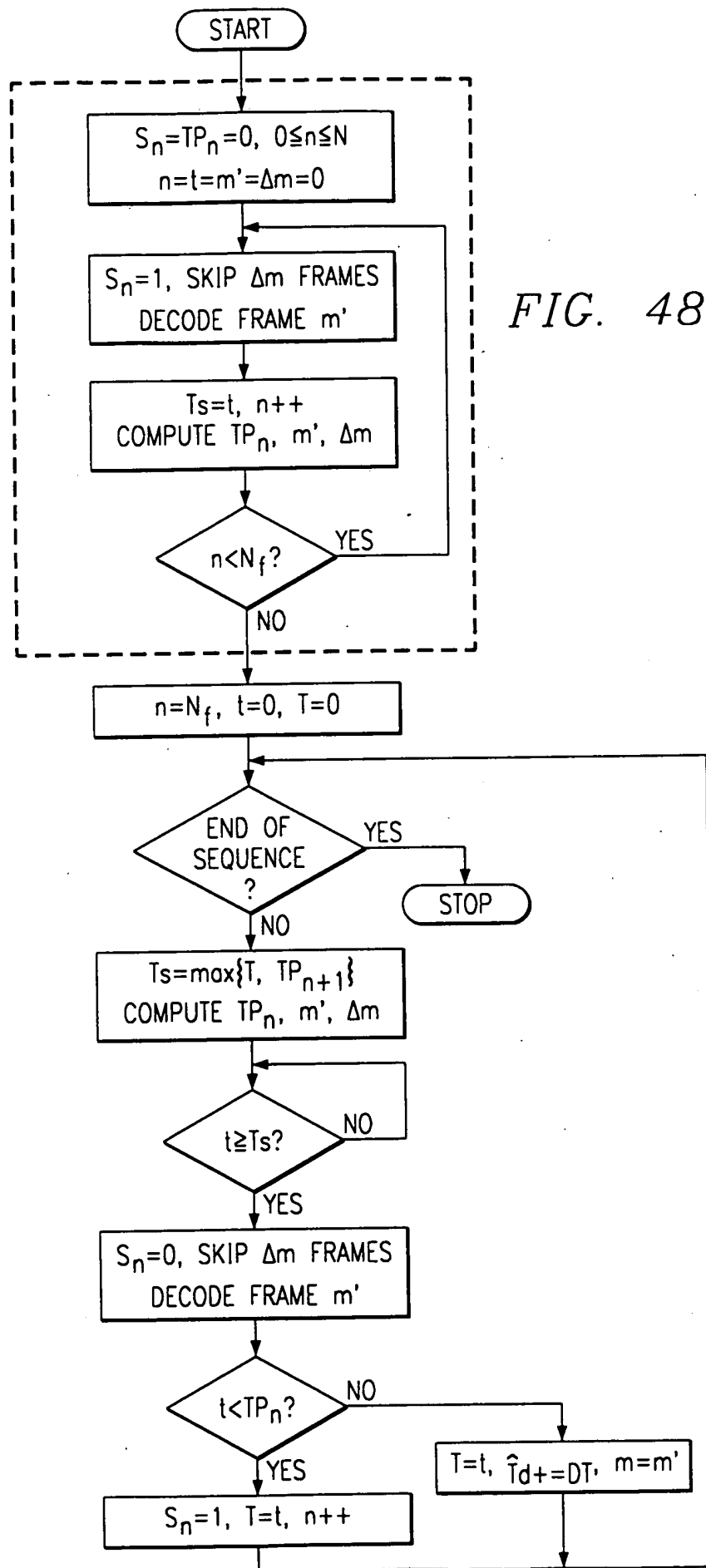


FIG. 51b



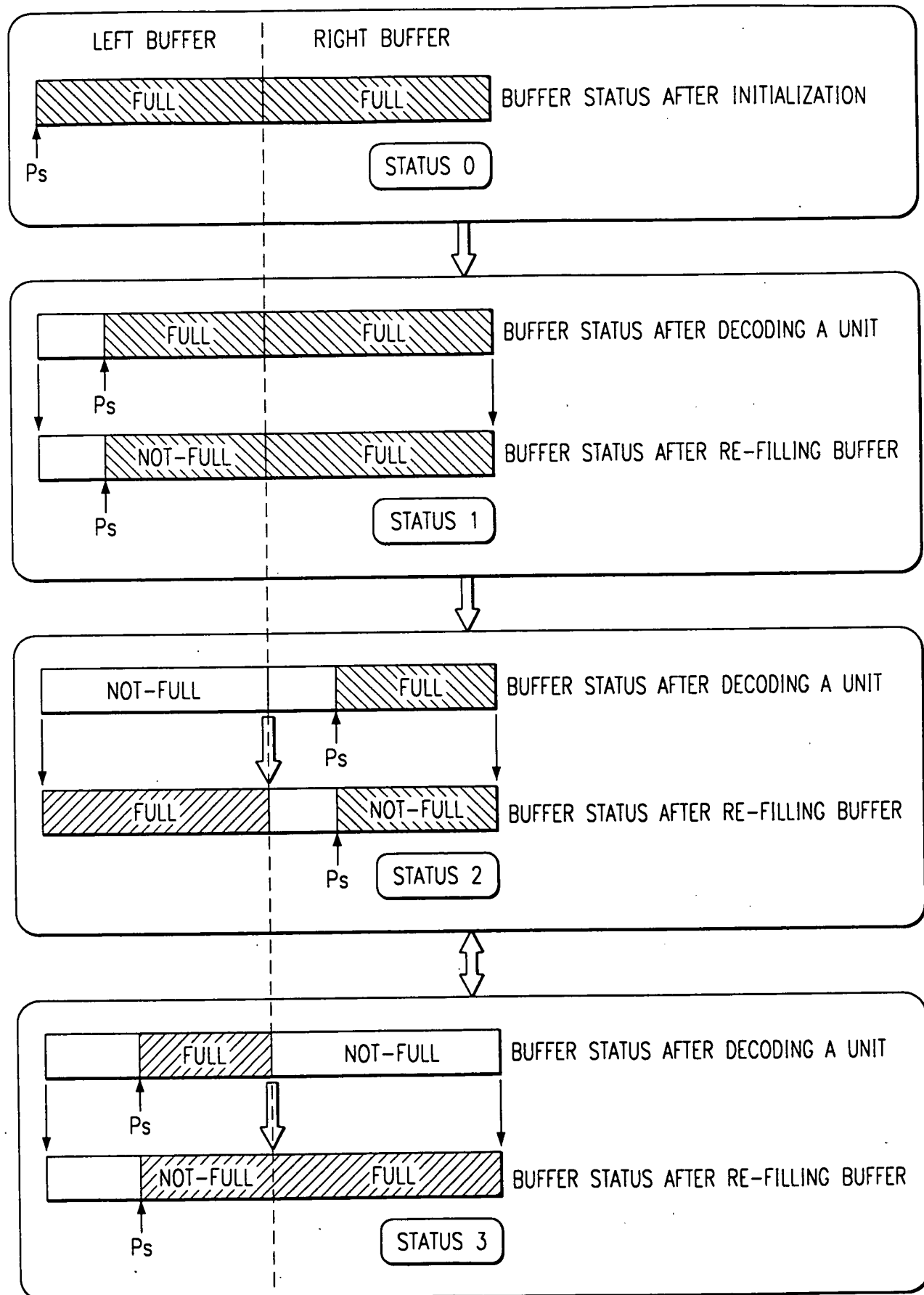


FIG. 52